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Canada. Montreal Harbour Commission

THE HARBOUR OF MONTREAL

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ANNUAL REPORT
OF THE
Harbour Commissioners
of Montreal

For the Year 1931



COMMISSIONERS:
J. H. RAINVILLE, President
JOHN C. NEWMAN,
LT.-COL. H. J. TRIHEY, K.C.



IN PRESENTING their Annual Report for the year Nineteen hundred and thirty-one, the Harbour Commissioners of Montreal take this opportunity of recording their appreciation of the unfailing support and courteous co-operation of the Minister of Marine, the Hon. Alfred Duranleau, and his Deputy Minister, and the other officers of the Department at Ottawa, whose kindly interest has been of very material assistance to them in the solving of the many problems which they were called upon to deal with during the year.

Harbour Commissioners of Montreal

MONTREAL, 1ST APRIL, 1932.

To the Hon. ALFRED DURANLEAU, K.C., M.P.,
Minister of Marine,
Ottawa, Ont.

Sir:—

In compliance with Section 51 of the Commissioners' Act 57-8 Victoria, Chapter 48, the Harbour Commissioners of Montreal herewith respectfully submit their Annual Report of operations for the year ended 31st December, 1931.

We have the honour to be,
Sir,
Yours very respectfully,

J. H. RAINVILLE, President.
JOHN C. NEWMAN,
H. J. TRIHEY,
Harbour Commissioners.

The Commissioners have learned with deep regret of Mr. Alexander Johnston's decision to sever his active connection with the Department of Marine. While occupying the important position of Deputy Minister during a distinguished career extending over a long span of years, Mr. Johnston gained wide recognition as an authority on Canadian shipping and Harbour matters, and the Commissioners during several administrations have been indebted to him for a lively and continuous interest in all things concerning the development of the Port.

The Commissioners and their staff wish the retiring Deputy Minister long years of health and happiness to enjoy his well-earned leisure.

Harbour Commissioners of Montreal

ANNUAL REPORT

1931

NATIONAL PORTS SURVEY

Sir Alexander Gibb, in the course of the Survey of the national ports which he was requested to make by the Government, spent considerable time in Montreal, examining into the operations and facilities of the Port. The Commissioners are pleased to publish the following appreciation by Sir Alexander Gibb of the assistance given to him by members of the Commissioners' staff:—

“Queen Ann's Lodge,
Westminster,
London, S.W.1,
17th March, 1932.

“J. H. Rainville, Esq.,
President,
Montreal Harbour Commissioners,
Montreal, Que.

National Ports Survey

Dear Mr. Rainville,

Having now completed my survey of the National Ports of Canada, and submitted my report to the Dominion Government, I desire to take the opportunity to thank you, your colleagues and staff for your assistance, both to myself personally, and to the other members of the Mission, in the

collection of information and in the carrying out of the Survey. Without the generous co-operation of the officials connected with the administration of the port I should have found very great difficulty in carrying out my work. I would be very glad if you would kindly convey to your colleagues and the members of your staff my appreciation and thanks for their services.

I have very pleasant recollections of our association, and look forward to renewing our acquaintance in the future.

With kind regards,

Yours sincerely,

ALEXANDER GIBB."

MONTREAL AS A GENERAL CARGO PORT

In the glare of publicity attendant upon the achievements of the Harbour of Montreal since 1921 in the export of Canadian grain, the steady growth of Montreal as a general cargo port seems to have been overlooked.

This is scarcely to be wondered at, seeing that in the period between 1921 and 1931 the aggregate total exports of grain through the Harbour of Montreal have reached the impressive amount of more than one and a half billion bushels (1,544,000,000 bushels).

Furthermore, Montreal has been unusually well equipped to handle grain for export at high speed, and some of the records for rapid turn-around of ocean ships at this port have focussed the attention of shippers all over the world.

But the Harbour of Montreal is much more than merely a great grain port.

In 1921, in which year heavy grain shipments through Montreal began, the tonnage of commodities exclusive of grain handled at the Port amounted to 2,791,671 tons.

In 1931, despite the world-wide depression which existed in shipping and trade generally, the tonnage of commodities exclusive of grain which passed through the Port of Montreal amounted to 7,757,203 tons.

Thus in eleven years, the tonnage of commodities other than grain handled at the Harbour of Montreal in the season of navigation has increased by One Hundred and Seventy-seven per cent (177%).

THE ST. LAWRENCE WATERWAY PROJECT

In the Annual Report of the Harbour Commissioners of Montreal for the year 1908 there was published the following expression of the views of the then Commissioners, Messrs. G. W. Stephens, L. E. Geoffrion, and C. C. Ballantyne, in regard to St. Lawrence development:—

“As Winnipeg is the gateway to the great producing areas of the Northwest, so is the St. Lawrence the Canadian portal to the European markets.

Inland vessels and the Northern continental railways, in their race to the sea, reach ocean navigation first at Montreal. With the present St. Lawrence canals, the present railways, the existing facilities at Montreal, and the 30-foot ship channel to the sea, the Canadian National route can hold its own with its only dangerous rival, the Buffalo-New York route.

What will happen when the two new transcontinental railways now under construction are completed, when the Georgian Bay or improved St. Lawrence canals are ready for traffic, when ample accommodation is given in Montreal Harbour, and when the ship channel has a depth of 35 feet, one can conjecture with satisfaction.”

In the Annual Report of the Harbour Commissioners of Montreal for the year 1920, there was published the following statement of the views of the then Commissioners, Messrs. W. G. Ross, Farquhar Robertson and General A. E. Labelle, which had been submitted by Mr. W. G. Ross, President, to a meeting of the International Joint Commission held in Montreal on October 8th and 9th, 1920:—

“(1) The Commissioners are of the opinion that it is desirable to improve the present St. Lawrence canal system or other waterway to the extent of facilitating the larger lake boats' access to the Port of Montreal. They are of the opinion that such improvement should not extend beyond a fair margin of draft for such vessels.

(2) The effect on the development of the Waterway between ocean and lake ports, would be of advantage in the economy of time of lake vessels and consequently lower rates of freight. They are of the opinion that the type of vessel suitable for lake traffic is not suitable for ocean traffic, and

that the ocean type of vessel, on the other hand, would not be able to compete with lake vessels on inland service.

(3) The industrial effect would only be beneficial in conjunction with power development. At the present time (and they presume in the further development of the St. Lawrence canal system) the traffic through the canals is free, not only to Canadians but is free to United States vessels. Consequently, in order to meet the interest on the cost of such a policy, power development is essential and would benefit the adjacent territory in the development of industrial enterprise. With sufficient safeguards as to ownership and control of power development, as well as of distribution, the industrial development would be extensive and of great advantage to the country," etc.

In view of recent developments in the realm of St. Lawrence improvement, and the widespread public interest which has been aroused by this question, the Commissioners are of the opinion that this issue of the Annual Report of the Montreal Harbour Commission should contain an expression of the views of the present Board in regard to the St. Lawrence Waterway project.

The Commissioners have devoted much time and considerable care to the study of the Waterway proposals. In the course of the past few years there has been a copious flow of published material in regard to this project, from official and unofficial sources, both in support of the project and in opposition, in addition to the reports and statements of the various appointed Boards and Commissions. Much of this material is valueless, but there are available a number of valuable and intelligent contributions to the Waterway discussion which have materially assisted the Commissioners in forming their conclusions.

Vociferous objection to the Waterway project has been voiced in certain sections of Canada, on the ground, amongst other reasons, that the proposed development would "ruin the Port of Montreal." This statement has been given particular attention by the Commissioners, and after the fullest study and enquiry they have no hesitation in stating that such a fear is groundless, and is entirely without foundation.

The fact has not been lost sight of by the Commissioners that at the present time the St. Lawrence waterway is partially completed. This situation has an important bearing on the future of the Harbour of Montreal, particularly in relation to competing routes.

Without attempting to pronounce on the questions of cost or of United States co-operation in part of the project, which points they believe may safely be left to the care of Canada's elected representatives, the Harbour Commissioners of Montreal wish to go on record as warmly endorsing the proposal for completion of the canalization of the St. Lawrence above Montreal, as they believe such a development will be in the best interests of the Port of Montreal, will materially assist this country's trade, and will have a beneficial effect on transportation and industrial progress.

THE COMPLETION OF THE 35 FT. SHIP CHANNEL

On more than one occasion since the last Annual Report of the Harbour Commissioners of Montreal was issued, the Commissioners have expressed themselves as of the opinion that a special effort should be made by the Government to bring to completion the dredging of the 35 ft. channel from Montreal to the sea. In an address delivered by Mr. J. H. Rainville, President, before the Chambre de Commerce on March 2, 1932, reference was made to this matter, and the following points were stressed:—

The 30 ft. channel between Montreal and the sea has been in existence for many years, and ships have been constantly enlarged, until now Montreal has 20,000-ton ships sailing from its waters every week in the navigation season. In 1889 the largest vessels which came to this port were of 14,000 tons. Gradually the shipping companies built bigger vessels for the Montreal trade, increasing the size of ships from 15,000 tons to 17,000 tons, 19,000 tons, and finally 20,000 tons. The latter is the maximum size of ship which can use the present 30 ft. channel. The 30 ft. channel is no longer sufficient. It is a matter of common knowledge that the trend in maritime construction is towards bigger ships, which can be operated more economically than smaller vessels. And at present, Montreal remains closed to the big ships.

The dredging of the 35 ft. channel was begun in 1907 in response to persistent demands of transportation companies, public bodies, and of the Harbour Commissioners of Montreal. Only a comparatively small part of this work remains uncompleted. It was originally intended to have been finished by 1922; now, according to the most recent information, it is promised for 1933.

The dredging of this 35 ft. channel is being done in response to a most pressing need. All those who are interested in maritime affairs have been persistently urging its completion. The President of the Shipping Federation of Canada, in his last annual address to the members of that body,



AERIAL VIEW OF JACQUES CARTIER AND VICTORIA PIERS

stated that "the deepening of the channel to 35 ft. from Montreal to the sea is a matter of prime national importance." He further stated:—

"I do not think anyone with a knowledge of the present limitations of the ship channel, having regard to the dimensions of large vessels now using that channel, will deny the necessity for early completion of the 35 ft. waterway. So far as the Port of Montreal is concerned, its future development is entirely bound up in the ship channel leading from the sea to its Harbour, and if deepening and widening of that channel does not progress in proportion to increases in the dimensions of ocean carriers, the port itself cannot experience that greater future development to which its location entitles it."

The extra 5 feet in channel depth will make it possible for ships of 30,000 tons to come to Montreal. Such a range of maximum tonnage would enable the Port of Montreal to accommodate all the passenger and freight vessels in the world, with the sole exception of the few super-class passenger ships.

The delay in completion of the 35 ft. channel is all the more inexplicable when it is remembered that the country has built the new Welland Canal at a cost of \$125,000,000, while the total amount of money which has been spent on the ship channel since its commencement is less than \$30,000,000, from which must be deducted the sum of \$13,000,000 for the construction of dredges and the operation of the Government shipyards at Sorel. The case is rendered stronger by the fact that the Welland Canal can only be of value to Canada after the St. Lawrence Waterway has been built.

Every Board of Harbour Commissioners of Montreal has realized the political and economic importance of the St. Lawrence as a connecting link between the East and the West of Canada. Their efforts have been forcefully directed towards the improvement of navigation. The present Board of Commissioners is equally aware of its duty in this respect, and joins with the Shipping Federation of Canada and with all those who have at heart the progress of our country in urging the Government to complete the dredging of this 35 ft. channel below Montreal at the earliest possible date.

MARINE INSURANCE RATES ON ST. LAWRENCE

Inextricably associated with the question of the deepening of the ship channel below Montreal to 35 feet is the matter of the excessive marine insurance rates which are in force on the St. Lawrence route, in comparison with rates charged on competitive routes.

Canada has taken this matter far too quietly up to now. There have been isolated protests from time to time by individuals and by public bodies, but there has never been an organized and forcible protest by the Canadian Government against a situation which constitutes a distinct menace to Canadian trade, and which is a direct hardship on our ports and shipping. How few people in Canada realize the extent of this discrimination against Canadian shipping and trade is evident from the lack of public interest in the matter.

From April 15th to December 1st in each year the St. Lawrence route is open to shipping. It is 200 miles shorter than the route from Liverpool to New York, and 1,000 miles of its distance are in protected waters. Every mariner and navigator who has sailed to Montreal is familiar with the excellence of the route, the modern and scientific aids to navigation which have been provided by the Canadian Government, and with the fact that disasters to shipping on the St. Lawrence have been as infrequent, if not more infrequent, than on the United States Atlantic coast. The insurance underwriters are equally aware of all these things, but they refuse to make any concession to Canada.

Rates on hulls on the St. Lawrence are 5% per annum from 1st May to 30th September; 5.3% from Oct. 1st to Oct. 31st; and 5.7% from Nov. 1st. to Nov. 25th. During this entire period the rate out of New York remains at $2\frac{1}{2}\%$. In other words, the insurance underwriters receive annually for every twenty vessels operating on the St. Lawrence route, a sum equivalent to the cost of one ship. These are almost distress rates.

The equivalent rate per day on a ship of 8,500 tons costing \$480,000 (allowing for an annual lay-up period) is \$73.00

minimum on the St. Lawrence, as compared with \$37.00 per day on the New York route, or, in other words, twice as much.

On a round trip of 30 days, a vessel of the size and cost mentioned trading to Montreal would pay \$2,190, as compared with \$1,110 to New York. The annual excess cost for hull insurance to a ship of the size indicated trading to Montreal during the entire season of navigation would be \$7,873 greater than would be paid by a similar ship trading to New York.

On a palatial passenger liner of 20,000 tons costing in the neighbourhood of \$5,000,000, the annual excess hull insurance to Montreal as against New York would be about \$78,000.

It is estimated that the value of shipping tonnage on the Montreal route during the navigation season of 1931, including passenger liners, freighters and tramps, trans-Atlantic and coasting, roughly represents about \$160,000,000 worth of ships. On this basis of valuation, the total cost for the season of navigation for marine hull insurance would be around \$4,900,000. The equivalent cost of the New York route would be about \$2,400,000.

In short, Montreal shipping is being discriminated against to the extent of \$2,500,000 per annum for hull insurance. And to this impressive total must be added the excess cost of cargo insurance, which is also a striking figure. Taking 7,000,000 tons as an average total of imports and exports (exclusive of domestic tonnage), and using the rates for cargo insurance which the shipper is charged on the Montreal route, we obtain a total cost of \$2,010,000. The equivalent cost on the New York route would be \$945,000.

Thus the continued refusal of the underwriters to place the Montreal sea route on a parity with New York is costing the Canadian importer and exporter of merchandise the tidy sum of \$3,565,000 annually. This sum represents the interest on \$84,000,000 at 4%.

Is it not a cause for wonder that with this unnecessary and unjustified handicap against it, the Harbour of Montreal has been able to make such a splendid showing? Montreal has

grown into an important seaport, and its commerce has increased by leaps and bounds, despite this disadvantage, because of its unassailable strategic position, the excellence and cheapness of its facilities, and the advantage which the connecting inland waterways have given the Port. But this marine insurance question has become of vital importance. Montreal is becoming increasingly surrounded by competitors, and its trade is in danger of being diverted through other channels.

In addition to the ocean tonnage which comes each year to Montreal, there is a tremendous tonnage operating on Canadian inland waters which is also being charged excessive marine insurance rates, both for hulls and cargoes.

Steps should be taken, and at once, by the Government of Canada to remedy this monstrous burden on Canadian trade. If necessary, and should the strongest official representations fail to have these insurance rates reduced, the Government should seriously consider the establishment of a Canadian Department of Marine Insurance, which would offer rates to hulls and cargoes in the Canadian trade and on Canadian waters that would compare with the rates now being paid by this country's competitors. There is no reason to believe that such a department would not be a money-making institution, in addition to relieving the trade of the country from an intolerable handicap.

THE AUSTRALIAN GOOD-WILL SHIP

Of outstanding interest, in connection with the development of Inter-Imperial trade, was the arrival in the Harbour on October 24th, 1931, of the Australian Good-will Ship, the S.S. "Canadian Constructor."

Laden with a cargo of typical Australian products, such as tinned and dried fruit, wines, eucalyptus, woollen goods, sandalwood oil, tinned meat, passion fruit, lamb carcasses, wool, canary seed, peanuts, turtles, millet, pawpaw and pineapple, as well as two young kangaroos, the good-will ship was accorded an enthusiastic reception by representatives of the Canadian Manufacturers' Association, Montreal Board of Trade, Chambers of Commerce, shipping and transportation interests, and the Commissioners.

The Commissioners extended every facility for the success of this pioneering trade mission, and were the recipients of several congratulatory messages on the excellence of the co-operation rendered.

The "Canadian Constructor" subsequently sailed from Montreal for Australia as a "Canadian Good-will Ship" with a cargo of Canadian products destined to the Antipodes.

DISTINGUISHED VISITORS

During the season of navigation of 1931, the following distinguished royal guests of the Canadian Government paid visits to the Harbour of Montreal:

On August 3rd, 1931, Their Majesties the King and Queen of Siam, travelling incognito as Their Royal Highnesses the Prince and Princess of Sukhodaya, with their official and unofficial suite.

On June 30, 1931, His Imperial Highness Prince Takamatsu of Japan.

THE YEAR'S ACTIVITIES

The third successive year of depressed conditions in commerce and industry was accompanied, at the Port of Montreal, by a slight but encouraging improvement in general activity. Grain shipments from Montreal increased by about 8,000,000 bushels over the previous year, and import bulk commodities were notably on a satisfactory scale. The total of cargo imports reached a new high figure. Oil tonnage attained the highest level in the Port's history, and domestic merchandise continued its unwavering increase of several years past. The Harbour Commission's revenue was greater than in 1930 by approximately \$190,000.

Despite these indications, however, the shipping companies experienced an unsettled and difficult year, and both general package freight and passenger carryings were less than in previous years.

REVENUE

Income on revenue account in 1931 amounted to \$4,500,-457.59, which was an increase of \$189,522.46 over the previous year. This total was made up as follows:—Grain elevator system, \$1,917,942.42; Wharfage rates, \$1,157,624.76; Railway traffic department, \$453,146.74; Rental of sheds, etc., \$383,-496.08; Rental of Harbour spaces, \$245,020.23; Sundry receipts on revenue account, \$204,974.96; Storage warehouse, \$129,995.14; and Interest, \$8,257.26.

The financial statement shows that expenditures on revenue account amounted to \$4,832,892.46, and that there was charged to revenue account the sum of \$536,880.00 for sinking fund reserve, and the sum of \$15,549.88 for adjustment of 1930 municipal taxes. Interest on Government debentures amounted to \$2,400,757.95, an increase over the previous year of \$126,140.82. Operation and maintenance in 1931 cost \$2,431,076.69, as compared with \$2,393,795.79 in 1930, an increase of \$37,280.90 or 1½%. This slight increase, however, is entirely attributable to the fact that the operation and maintenance total has been charged with approximately

FINANCIAL STATEMENT

The Statement of Income and Expenditure, for the Year ended 31st December, 1931, exhibits fully the Financial Transactions of the Board for the period. The same, certified by the Acting Comptroller, and the Secretary, and verified by the Auditors, follows:

ITEMS	Total	Grand Total	ITEMS	Total	Grand Total
INCOME ON REVENUE ACCOUNT			EXPENDITURE ON REVENUE ACCOUNT		
Crane Elevator System Operations	\$1,917,942.42		Crane Elevator System Operations	\$ 750,983.11	
Storage Warehouses	453,146.71		Maintenance and Repair	154,102.76	
From Harbour Equipment	129,995.14		Storage Warehouses, Operation, Maintenance and Repair	201,687.52	
From Harbours, Sheds, Hosts, etc.	383,496.08		Harbours, Sheds, Hosts, etc.	137,325.41	
Wharfage fines	1,245,020.23		Wharves, Maintenance and Repairs	330,895.62	
From Storage Spaces, etc.	204,974.96		Crane Elevator System Operations for Administration charges	444,626.45	
Sundry Receipts on Revenue Account	257.26		Police Service on Wharves	73,093.14	
Interest		\$1,500,457.59	Sundry Delinquencies on Revenue Account	168,929.68	
Total Income on Revenue Account		\$1,500,457.59			
EXPENDITURE ON CAPITAL ACCOUNT			EXPENDITURE ON CAPITAL ACCOUNT		
RECAPITULATION OF CAPITAL ACCOUNT			RECAPITULATION OF CAPITAL ACCOUNT		
Donation Government—advances on loans under Act 17, Corps A, Chapter 8			Harbours of Refuge		
Balances at 31st December, 1931			Drinking of Canal Pier		
Sinking Fund Reserve Account:			Real Estate—		
Amount at 31st December, 1930	\$1,191,900.00		Properties, Montreal Las	929.92	
Add: Reserve from Revenue 1931	536,880.00		Properties, Port 782, Hotel Regina	6,381.06	
Total Sinking Fund Reserve at 31st Dec. 1931	1,728,780.00		Total, Real Estate	7,310.92	
Total Balances at 31st December, 1931	3,921,126.23		Wharves, Piers and Basins—		
Total Balances at 31st December, 1930	4,175,466.17		Harbour Wharves—		
Difference in Balances, to deduct		204,339.94	High Level of Shore Wharves, Secs 25-33	912.06	
			High Level Shore Wharves, Secs 34-42	382,441.16	
			Water Mains and Drains	45,225.29	
			High Level Wharf, Bickelike Pier	2,413.40	
			Water Mains and Drains—Old	1,779.00	
			Coal Dock, Sections 56-61	165,713.32	
			Wharves, Sections 47-50	368.65	
			King Edward Pier—Reconstruction	4,015.19	
			King Edward Pier—Reconstruction	610,805.70	
			Laurel Pier Enlargement	282,179.91	
			Wharf, Section 105-6	345.38	
			Wharf, Section 106—British American Oil	3,754.09	
			Wharf, Section 107, Montreal 1st Windmill Point Intankment	22,559.83	
			Bickelike Pier, Basin and Approach	22.12	
			Total, Wharves, Piers and Basins	12,378.23	
			Total, Wharves, Piers and Basins	1,475,543.35	
			Plant and Facilities—		
			Extension to Series Lighting System	1,099.32	
			Installing, Spigular System, Main	4,900.32	
			Coal Spreader—Machine Shop	450.40	
			Total, Plant and Facilities	6,110.94	
			Roads and Streets		
			Subsidence, Sections 40-41	2,960.35	
			Roadway Power House and Roadway	20,668.00	
			Subway—St. Lawrence Sugar Refinery Tracks	9,293.00	
			Sections 26-28, Tracks for Trucks	21.46	
			Total, Roads and Streets	33,882.72	
			Crane Elevator System		
			Pier No. 3, Access	44,329.85	
			Traveling Staircases for Callarins, serving Berths 2 to 10 inclusive	19,549.46	
			Elevator No. 1, Electrical Extension	14,760.18	
			Total, Crane Elevator System	74,192.55	
			Permanent Sheds and Hosts—		
			Main Sheds 1 to 10, King 1 to 10	258,386.41	
			Main Sheds Extension, King Edward Pier Shed No. 10	81,690.99	
			Offices in Shed No. 12	79,000.00	
			Total, Permanent Sheds and Hosts	419,077.40	
			Storage Warehouses		
			Pier No. 4, Pier Wall, 8th Pier	721.65	
			Total, Storage Warehouses	721.65	
			Total Expenditure on Capital Account	1,546,370.55	
			Balances at 31st December, 1931		
			Account—Reserve	\$98,267.99	
			Account—Crane Storage	418,247.11	
			Account—Sheds and Hosts	25,407.51	
			Account—Black and on Hand	860,125.93	
			Deferred Charges and Supplies	99,504.72	
			Total Balances at 31st December, 1931	2,922,123.36	
			Total Balances at 31st December, 1930	1,481,999.11	
			Differences in Balances, to Add		

Certified
ALLEN, Ernest W., Acting Comptroller
Montreal, April 1st, 1903

Verified
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 Auditors

continued
J H A. COMMUNITY,
Secretary

\$70,000.00 paid to the City of Montreal for municipal taxation which had been in dispute for several years.

The percentage of revenue increase in 1931 over the previous year is 4.4%.

Expenditure on capital account during the year amounted to \$1,546,370.56.

Yearly revenues of the Harbour Commissioners of Montreal for several years past have been as follows:—

1921.....	2,891,274.42
1922.....	3,460,810.87
1923.....	3,721,159.99
1924.....	4,382,115.25
1925.....	4,749,100.69
1926.....	4,632,599.92
1927.....	5,453,951.56
1928.....	5,589,327.12
1929.....	5,089,561.17
1930.....	4,310,935.13
1931.....	4,500,457.59

Ships and Shipping Tonnage

Trans-Atlantic ship arrivals in 1931 amounted to 811, a decrease of 15 from the previous year. Coasting vessels numbered 339, which was 32 less than in 1930. The number of inland vessels in 1931 was 4,000, as compared with 4,255 in 1930. The following statement shows the number and net registered tonnage of ocean vessels (trans-Atlantic and coasting combined) which came to the Port in recent years:—

	Number	Net Reg. Tonnage
1923.....	1,082	3,683,720
1924.....	1,223	4,096,332
1925.....	1,255	5,104,313
1926.....	1,421	4,221,730
1927.....	1,610	4,992,486
1928.....	1,607	5,494,062

	Number	Net Reg. Tonnage
1929.....	1,283	4,637,800
1930.....	1,197	4,434,589
1931.....	1,150	4,069,421

Tonnage of Merchandise Handled

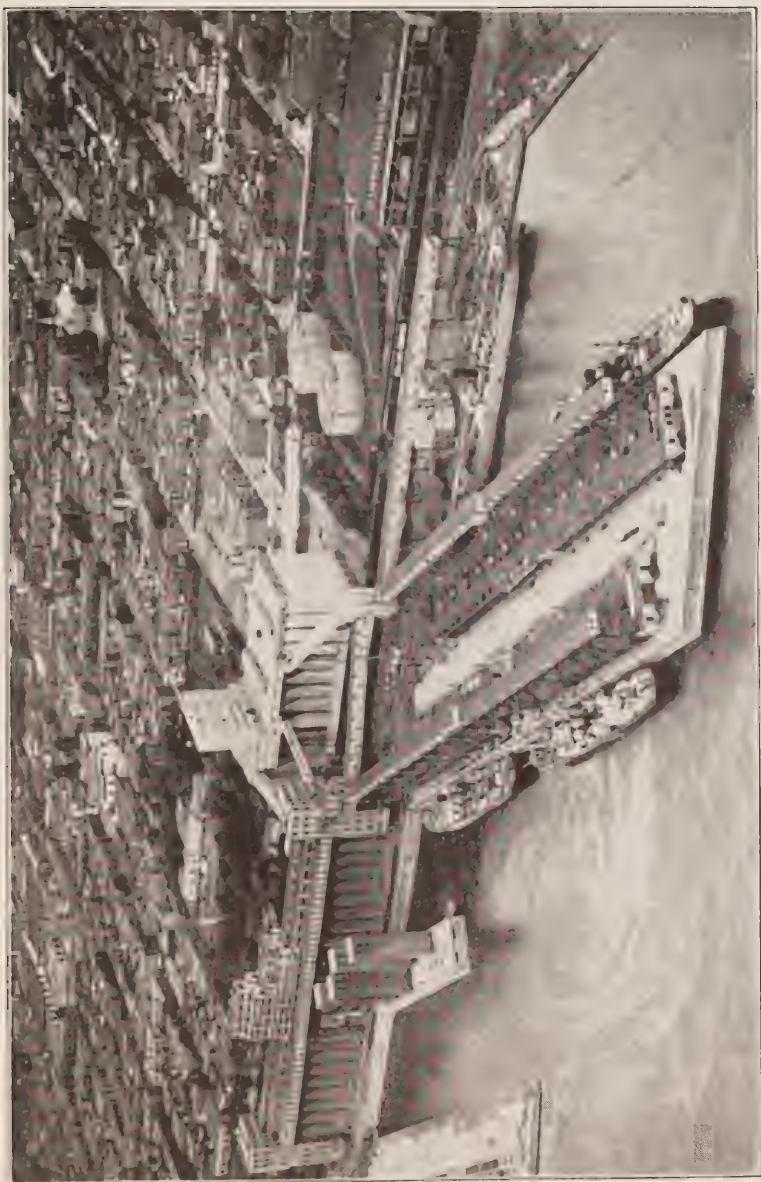
The total tonnage of imports, exports and domestic merchandise handled through the Port in 1931 resulted in an increase of 226,605 tons over 1930. For the third successive year, import tonnage reached a new high figure, viz. 3,568,542 tons, mainly due to larger receipts of bulk cargo commodities such as petroleum oil, gasoline, woodpulp, corn, raw sugar and phosphates. Export tonnage was slightly less than in 1930, in spite of increased grain exports. Exports of automobiles and parts decreased by 76,000 tons, and exports of flour were less than in the previous year by 74,000 tons. Domestic merchandise reached a new high figure of 3,308,997 tons.

The following statement shows the yearly division and total tonnage of merchandise handled in the past several years:—

	Import tons	Export tons	Domestic tons	Total tons
1923.....	1,421,295	4,270,226	1,815,351	7,506,872
1924.....	1,472,933	5,594,310	1,918,346	8,985,589
1925.....	2,394,311	5,265,151	1,477,819	9,137,281
1926.....	2,028,162	4,549,835	2,632,702	9,210,699
1927.....	2,693,535	6,175,485	3,052,153	11,921,173
1928.....	2,543,685	6,838,108	3,207,333	12,589,126
1929.....	3,256,991	3,418,896	3,260,985	9,936,872
1930.....	3,376,182	3,101,561	3,210,026	9,687,769
1931.....	3,568,542	3,036,835	3,308,997	9,914,374

Coal and Oil Receipts

Receipts of coal and oil were again on a very large scale in 1931. The combined tonnage of these commodities handled in the Port, viz. 3,824,262 tons, represents more than one-third of the total tonnage for the year. Receipts by water of



GRAIN ELEVATOR No. 3, CAPACITY 5,000,000 BUSHEL

British and foreign anthracite decreased to 743,475 tons, as compared with 954,311 tons in 1930, due to the fact that no Russian coal was received in 1931, although 200,651 tons of this commodity had been received in 1930.

Classifications of coal receipts during 1931 were as follows:

Canadian bituminous.....	1,377,745 tons
British anthracite.....	692,012 "
American bituminous.....	82,747 "
German anthracite.....	54,642 "
British bituminous.....	36,668 "
American anthracite.....	9,349 "

Oil and gasoline imports in 1931 reached a new high figure for all time, and showed an increase of more than 450,000 tons over the previous year.

Crude Oil.....	1,428,522 tons
Gasoline.....	130,665 "
Refined Oil.....	11,912 "

Grain Exports

The month of May, 1931, witnessed a resumption of activity in the deliveries of grain from the Commissioners' elevators comparable to the banner years of 1927 and 1928. Total deliveries for May amounted to 24,136,527 bushels. From the end of May, however, to the close of the navigation season, grain deliveries were on a sluggish scale, and reached a total of 89,512,312 bushels, as compared with 81,669,864 bushels in 1930.

Montreal was again the leader amongst North American seaports in shipment of grain, and in its seven-and-a-half months' season of navigation exported considerably more of this commodity than any of its competitors did in the entire twelve months of 1931. The following statement gives the comparative figures:—

Montreal.....	89,512,312 bushels
New York.....	60,435,336 "
Galveston.....	21,590,482 "

Baltimore.....	9,592,492 bushels
New Orleans.....	7,920,442 “
Philadelphia.....	4,233,259 “
Boston.....	3,063,753 “
Newport News.....	2,073,192 “
Portland, Me.....	1,727,417 “ ;
Mobile.....	794,080 “

Railway Traffic

Although total tonnage of merchandise handled in the Port in 1931 was greater than in 1930, the increase was confined to bulk cargo commodities. General package freight was less, and this condition is reflected in the returns of the Commissioners' railway traffic department for the year under review. The total number of cars handled on the Harbour tracks was the lowest in any year since 1921, viz., 185,155 cars. Low water levels in the Port in the Fall of 1931 caused the diversion from Montreal of a considerable number of cars of export freight. Increases were noted in cars of grain and in cars of cattle for export, but the number of grain cars, viz., 3,088, was nevertheless only about one-sixth of the yearly average for the ten-year period from 1920 to 1929. The number of cars handled in the past ten years is shown on page 39.

New Works

Virtually no new projects of capital construction were undertaken during 1931, and expenditures under this head were confined to continuation or completion of works which had been commenced in 1930. Of the total expenditure on capital account (which amounted to about 70% of the figure for the previous year) practically 80% is represented by the following three items:—

Completion of reconstruction of downstream side of King Edward Pier.

Continuation of high-level shore wharves, Sections 34-35.

Continuation of reconstruction of Laurier Pier.

SHIPPING

Navigation in 1931 opened on March 19th and closed on December 13th, the opening date being the earliest in the Port's history.

From a shipping point of view, the year was even somewhat less satisfactory than 1930, despite the brisk export movement which was experienced in May. Liner schedules were cut drastically, and tramp ship arrivals showed no improvement, although import movement of bulk commodities was on a satisfactory scale. Passenger carryings dropped sharply by about 20%, reflecting a world-wide condition.

Interesting developments in 1931 were the increase to a new high figure of imports of oil, the resumption on a fairly large scale of exports of cattle, and an increase in imports for transshipment to points on the Great Lakes.

Trans-Atlantic ships to the number of 811 arrived in the season of navigation, having net registered tonnage of 3,425,107, as compared with 826 ships in 1930 having tonnage of 3,740,884. From the Maritime Provinces and Newfoundland there came 339 ships with net registered tonnage of 644,314, as compared with 371 ships in 1930 having tonnage of 693,705.

British shipping again supplied the greatest proportion of total ocean vessel arrivals during the year with 819 vessels, of 3,201,384 tons. British ships represented 71% of the total, and their tonnage was equal to 79% of the total ocean vessel tonnage. Norway was represented by 156 ships, Italy by 34, and Sweden by 26. There were 25 German ships, 22 from Denmark, 21 from Holland, 16 from France, 15 from the United States, and 10 from Greece. There were 3 vessels from the Free City of Danzig, and 1 each from Belgium, Finland and Spain.

Ocean passenger carryings were sharply less than in 1930, as the following statement indicates:—

	1930	1931
Canadian Pacific Steamships . . . Westbound	22,055	25,932
Eastbound	32,480	25,741

	1930	1931
Cunard and Anchor-Donaldson . Westbound	12,048	12,090
Eastbound	20,615	17,825
White Star Line Westbound	13,905	2,850
Eastbound	9,951	4,762
Canadian National Steamships . Northbound	1,064	912
Southbound	935	1,002
	<hr/>	<hr/>
	113,053	91,114
Decrease in 1931		21,939

Coastal passenger trade between Montreal and Newfoundland and Lower St. Lawrence ports has made great strides in the past few years, and in 1931 the total increased by about 70% over 1930:—

	1930	1931
Clarke Steamship Company In	974	1,949
Out	1,107	2,037
Furness Withy Company In	475	606
Out	608	708
	<hr/>	<hr/>
	3,164	5,300
Increase in 1931		2,136

The number of passengers carried by the lake and river vessels of the Canada Steamship Lines showed a slight increase in 1931 over the preceding year, viz.:—

	1930	1931
Canada Steamship Lines In	70,851	84,691
Out	55,027	42,886
	<hr/>	<hr/>
	125,878	127,577
Increase in 1931		1,699

The following table gives types of cargo carried by vessels which arrived at, and sailed from the Port during the navigation season of 1931:—

Inward Cargoes	Number of Ships	Regd. Tonnage
General.....	547	2,308,510
Coal.....	259	766,247
Oil and Gasoline.....	147	613,496
In ballast.....	77	191,225
Sugar, raw and refined.....	39	58,321
Gypsum.....	18	22,199
Maize.....	11	31,567
Sulphur.....	7	18,318
Phosphate.....	6	9,533
Woodpulp.....	5	5,940
Nitrate of Soda.....	4	3,560
Iron Ore.....	3	8,399
Lumber.....	3	1,125
Molasses.....	2	6,515
Manganese Ore.....	2	6,059
Cork.....	1	3,173
Paper.....	1	2,147
Pulpboard.....	1	1,205
Scrap Steel Rails.....	1	1,138
Wire Rope, Barbed Wire.....	1	848
Speigeleisen.....	1	838
Black and Tin Sheets.....	1	793
Pebbles.....	1	726
China Clay.....	1	652
Paper.....	1	540

Outward Cargoes

Grain and General.....	350	1,968,515
General, only.....	242	358,186
Miscellaneous, in ballast.....	222	646,520
Oil Tankers, in ballast.....	144	610,212
Grain, only.....	138	384,552
Coal Boats, in ballast.....	14	49,966
Cement.....	13	18,030
Flour.....	5	3,837
Grain and Flour.....	2	5,375
Copper.....	2	1,388
Grain and Basswood Logs.....	1	2,662

PORT OF MONTREAL

Statement showing the Nationalities and Tonnage of Sea-Going
Vessels that arrived in Port during the Season
of 1931, which were navigated by 73,529
seamen

Nationality	Number of Vessels	Net Tonnage
British.....	819	3,201,384
Norwegian.....	156	422,786
Italian.....	34	113,850
Swedish.....	26	46,767
German.....	25	81,088
Danish.....	22	37,561
Dutch.....	21	52,341
French.....	16	38,729
American.....	15	24,384
Greek.....	10	28,881
Danzig.....	3	12,690
Belgian.....	1	4,003
Finnish.....	1	2,878
Spanish.....	1	2,079
	1,150	4,069,421

HARBOUR OF MONTREAL

Statement showing the Classification of Trans-Atlantic Vessels that arrived in the Port of Montreal during the past ten years.

Year	Steamships		Schooners		Grand Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage
1922.....	968	3,451,703	1	1,356	969	3,453,059
1923.....	892	3,221,781		....	892	3,221,781
1924.....	987	3,597,031	1	116	988	3,597,147
1925.....	1,040	4,744,793	..	....	1,040	4,744,793
1926.....	1,042	3,551,489	..	..	1,042	3,551,489
1927.....	1,231	4,252,325	..	....	1,231	4,252,325
1928.....	1,222	4,693,925	..	....	1,222	4,693,925
1929.....	916	3,910,679	..	....	916	3,910,679
1930.....	826	3,740,884	..	..	826	3,740,884
1931.....	811	3,425,107	..	....	811	3,425,107

HARBOUR OF MONTREAL

Statement showing the Classification of Vessels that arrived in the Port of Montreal during the past ten years from the Lower St. Lawrence and the Maritime Provinces and Newfoundland

Year	Steamships		Schooners		Grand Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage
1922.....	223	479,333	2	245	225	479,578
1923.....	187	461,645	3	294	190	461,939
1924.....	231	498,903	4	282	235	499,185
1925.....	215	359,520	..	..	215	359,520
1926.....	379	670,241	..	..	379	670,241
1927.....	379	740,161	..	..	379	740,161
1928.....	385	800,137	..	..	385	800,137
1929.....	367	727,121	..	..	367	727,121
1930.....	371	693,705	..	..	371	693,705
1931.....	339	644,314	..	..	339	644,314

HARBOUR OF MONTREAL
Combined Statement Showing the Number and Net Tonnage of Ocean Vessels that arrived in the Port of Montreal during the past Ten Years.

Year	TRANS-ATLANTIC		MARITIME PROVINCES AND NEWFOUNDLAND		TOTAL	
	Vessels	Tonnage	Vessels	Tonnage	Vessels	Tonnage
1922.....	969	3,453,059	225	479,578	1,194	3,932,637
1923.....	892	3,221,781	190	461,939	1,082	3,683,720
1924.....	988	3,597,147	235	499,185	1,223	4,096,332
1925.....	1,040	4,744,793	215	359,520	1,255	5,104,313
1926.....	1,042	3,551,489	379	670,241	1,421	4,221,730
1927.....	1,231	4,252,325	379	740,161	1,610	4,992,486
1928.....	1,222	4,693,925	385	800,137	1,607	5,494,062
1929.....	916	3,910,679	367	727,121	1,283	4,637,800
1930.....	826	3,740,884	371	693,705	1,197	4,434,589
1931.....	811	3,425,107	339	644,314	1,150	4,069,421

During 1931, 4,000 inland and river vessels arrived at the Port, having a net registered tonnage of 3,770,753 tons.

HARBOUR OF MONTREAL

Statement showing the dates of the Opening of Navigation and the Closing thereof, the First Arrival and the Last Departure for Sea; also the greatest Number of Vessels in the Port at one time, during the past ten years.

Year	Opening of Navigation	Closing of Navigation	First Arrival from Sea	Last Departure for Sea	Greatest number of Vessels in Port at one time			
					Seagoing		Inland	
					No.	Date	No.	Date
1922.....	April 13th	Dec. 6th	April 24th	Dec. 2nd	91	Oct. 24th	55	Aug. 21st
1923.....	" 29th	" 18th	May 3rd	" 1st	63	May 23rd	52	" 4th
1924.....	" 18th	" 12th	April 24th	" 3rd	80	Nov. 4th	43	June 17th
1925.....	" 10th	" 10th	" 16th	" 8th	62	Aug. 19th	46	Oct. 6th
1926.....	May 2nd	" 6th	May 3rd	" 6th	60	May 19th	66	Sept. 7th
1927.....	April 10th	Jan. 4/28	April 12th	" 6th	80	Oct. 20th	44	May 1st
1928.....	" 26th	" 6/29	" 26th	" 9th	61	Nov. 19th	43	Aug. 13th
1929.....	" 10th	Dec. 10th	" 20th	" 7th	53	July 3rd	47	Oct. 7th
1930.....	" 12th	" 12th	" 21st	" 12th	50	May 14th	41	Sept. 12th
1931.....	Mar. 19th	" 13th	" 15th	" 11th	53	" 27th	29	Oct. 31st

GRAIN ELEVATOR SYSTEM

Deliveries of grain over the Commissioners' elevator system opened in the month of May in a most satisfactory manner and by the end of that month the total deliveries amounted to 24,136,527 bushels. It was believed in shipping circles that the end of the slump in grain exports from this Port had been reached, as the May total in 1931 was amongst the largest in the history of the Port. From the beginning of June, however, to the end of the navigation season, deliveries dwindled away to an average of less than 10,000,000 bushels per month. Total deliveries in 1931 amounted to 89,512,312 bushels, as compared with 81,669,864 bushels in 1930.

Grain deliveries from each of the four grain elevators in 1930 and 1931 were as follows:—

	1930	1931
	bushels	bushels
Grain Elevator No. 1	20,453,318	26,645,045
“ “ “ 2	21,644,646	26,990,167
“ “ “ 3	18,793,508	21,390,581
“ “ “ “B”	20,778,392	14,486,519
	<hr/>	<hr/>
	81,669,864	89,512,312

Monthly grain deliveries during the navigation season for the past two years have been as follows:—

	1930	1931
	bushels	bushels
May	11,754,982	24,136,527
June	11,102,963	12,066,648
July	12,339,605	8,468,346
August	11,274,078	6,279,056
September	9,154,524	8,005,531
October	8,744,213	10,794,779
November	11,483,896	13,599,013

Of interest in the analysis of the year's grain deliveries was a decrease of some 16,000,000 bushels in wheat deliveries, and increases of 15,000,000 bushels in barley and 6,000,000

bushels in oats. Hereunder are the various grains comprising total deliveries in 1930 and 1931:—

	1930 bushels	1931 bushels
Wheat.....	68,017,431	52,736,669
Barley.....	4,031,335	19,615,312
Oats.....	3,752,204	9,761,122
Corn.....	4,260,279	3,894,357
Rye.....	962,191	2,756,138
Flax.....	623,593	641,996
Buckwheat.....	22,831	105,525

Percentage of water-borne grain received at the Harbour elevators was 90% of the total receipts, viz.:—

Year	No. of Vessels	Bushels	No. of Cars	Bushels	Percentage of total by water
1924.....	1,606	112,020,615	28,276	53,118,784	68%
1925.....	1,637	124,827,099	19,554	38,974,626	75%
1926.....	1,471	104,674,724	16,684	31,223,158	77%
1927.....	2,246	159,071,036	18,725	35,216,274	81%
1928.....	2,156	163,429,223	30,231	53,887,651	78%
1929.....	855	69,800,508	11,618	20,628,281	78%
1930.....	848	75,362,566	2,178	4,199,854	95%
1931.....	855	80,660,388	4,503	8,775,326	90%

In 1931 Great Britain was again the largest importer of grain from Montreal. Holland, Belgium, Germany, France, Italy and Denmark follow in the order mentioned, as the following statement shows:—

	1930 bushels	1931 bushels
Great Britain.....	16,173,860	21,387,406
Holland.....	6,607,681	13,831,619
Belgium.....	8,627,879	12,087,269
Germany.....	2,663,685	9,652,643
France.....	6,390,207	6,220,052
Italy.....	16,770,954	4,604,001

	1930 bushels	1931 bushels
Denmark.....	205,994	2,811,950
Ireland.....	861,458	1,875,743
Norway.....	1,037,187	1,794,042
Greece.....	4,271,704	1,375,330
Sweden.....	160,000	810,119
Algeria.....	106,613	161,866
Malta.....	67,200	89,600
Brazil.....	205,333	none
Japan.....	190,667	none
Not known.....	4,040,956	2,215,694

HARBOUR COMMISSIONERS OF MONTREAL
Summary of Grain Handling, Elevators 1, 2, 3, and B
1931

	C.N.R. Cars	C.P.R. Cars	Total Cars	Vessels	Receipts (bus.)	Deliveries (bus.)
January.....	3	6	9	.....	15,716	589,258
February.....	7	7	14	.....	23,691	664,919
March.....	9	5	14	.....	22,822	789,853
April.....	13	73	86	44	4,172,015	2,930,910
May.....	380	425	805	228	23,185,075	24,136,527
June.....	260	589	849	133	14,494,227	12,066,648
July.....	214	80	294	85	9,053,625	8,468,346
August.....	224	197	421	56	6,437,346	6,279,056
September.....	186	265	451	79	8,156,721	8,005,531
October.....	245	252	497	100	10,238,053	10,794,779
November.....	384	620	1,004	118	12,462,294	13,599,013
December.....	17	42	59	12	1,174,129	1,187,472
	1,942	2,561	4,503	855	89,435,714	89,512,312

HARBOUR COMMISSIONERS OF MONTREAL Summary of Grain Handling, Elevators 1, 2, 3 and "B" 1931

	Receipts (bushels)	Deliveries (bushels)
January.....	15,716	589,258
February.....	23,691	664,919
March.....	22,822	789,853
April.....	4,172,015	2,930,910
May.....	23,185,075	24,136,527
June.....	14,494,227	12,066,648
July.....	9,053,625	8,468,346
August.....	6,437,346	6,279,056
September.....	8,156,721	8,005,531
October.....	10,238,053	10,794,779
November.....	12,462,294	13,599,013
December.....	1,174,129	1,187,472
	<hr/>	<hr/>
	89,435,714	89,512,312

	Receipts (bushels)		Deliveries (bushels)
Water.....	80,660,388	Steamers.....	81,498,179
		Cars.....	6,208,401
Rail.....	8,775,326	Waggons....	1,805,732
	<hr/>		<hr/>
	89,435,714		89,512,312

First vessel unloaded April 15th, 1931.

Last vessel unloaded December 11th, 1931.

855 vessels.....	80,660,388	bus.
1,942 C.N. cars	} 4,503 cars.....	8,775,326
2,561 C.P. cars		
		<hr/>
		89,435,714

Stock in Elevators (at December 31, 1931)—
11,028,402 bushels.

SUMMARY OF GRAIN RECEIPTS, ELEVATORS 1, 2, 3 & "B"—1931

	WHEAT (bus.)	OATS (bus.)	BARLEY (bus.)	CORN (bus.)	RYE (bus.)	FLAX (bus.)	BUCK- WHEAT (bus.)	OTHER (bus.)	TOTAL (bus.)
January.....	2,859	9,195	.....	1,995	.....	.....	1,667	.....	15,716
February.....	3,860	18,638	.....	.....	.....	.....	.....	1,193	23,691
March.....	.....	19,027	.....	.....	.....	.....	.....	.....	22,822
April.....	2,687,265	126,003	1,101,801	256,946	.....	.....	.....	.....	4,172,015
May.....	13,427,346	2,836,126	5,909,949	457,487	371,586	182,581	.....	.....	23,185,075
June.....	9,017,841	1,059,034	3,750,181	233,918	390,255	42,998	.....	.....	14,494,227
July.....	4,418,132	1,069,940	2,783,572	527,409	102,191	152,381	.....	.....	9,053,625
August.....	3,170,399	617,940	2,266,790	120,070	262,147	.....	.....	.....	6,437,346
September.....	4,789,998	1,104,613	1,633,783	428,830	199,497	.....	.....	.....	8,156,721
October.....	7,471,113	944,120	279,080	1,343,473	134,897	14,400	50,970	.....	10,238,053
November.....	7,057,703	2,176,274	1,258,815	1,059,226	571,978	283,856	54,442	.....	12,462,294
December.....	481,947	606,828	45,670	.....	39,684	.....	.....	.....	1,174,129
	52,532,258	10,587,738	19,029,641	4,429,354	2,072,235	676,216	107,079	1,193	89,435,714

SUMMARY OF GRAIN DELIVERIES, ELEVATORS 1, 2, 3 & "B"—1931

	WHEAT (bus.)	OATS (bus.)	BARLEY (bus.)	CORN (bus.)	RYE (bus.)	FLAX (bus.)	BUCK- WHEAT (bus.)	OTHER (bus.)	TOTAL (bus.)
January.....	35,568	164,302	216,163	99,225	74,000	.....	.....	.....	589,258
February.....	40,239	201,499	299,443	57,375	66,250	.....	113	.....	664,919
March.....	115,261	205,652	310,799	61,590	64,300	32,251	.....	.....	789,833
April.....	2,121,060	157,823	559,268	25,959	66,800	.....	.....	.....	2,930,910
May.....	13,657,605	2,114,202	6,500,403	705,962	1,003,053	155,302	.....	.....	24,136,527
June.....	5,594,113	1,649,227	3,982,059	229,150	542,722	69,377	.....	.....	12,066,648
July.....	3,774,835	1,001,076	2,907,959	459,818	172,100	152,558	.....	.....	8,468,346
August.....	3,250,984	1,062,727	2,202,424	153,017	113,115	.....	.....	.....	6,279,056
September.....	6,248,556	1,007,727	333,306	300,942	60,000	.....	.....	.....	8,005,531
October.....	8,427,276	1,007,727	530,109	610,515	163,559	14,400	40,000	1,193	10,794,779
November.....	9,037,965	1,446,405	1,677,478	955,151	350,027	66,575	65,412	.....	13,599,013
December.....	433,207	190,966	95,901	235,653	80,212	151,533	.....	.....	1,187,472
	52,736,669	9,761,122	19,615,312	3,894,357	2,756,138	641,996	105,525	1,193	89,512,312

STATEMENT SHOWING DESTINATION OF EXPORT GRAIN -1931

(Bulk Grain Deliveries Direct To Vessel)

(Bushels)

COUNTRY	WHEAT	BARLEY	RYE	OATS	BUCK- WHEAT	TOTAL
Algeria.....	161,866	.....	.....	.....	.....	161,866
Belgium.....	8,432,770	2,293,607	352,407	983,501	24,984	12,087,269
Denmark.....	161,478	2,036,206	525,900	88,366	.....	2,811,950
France.....	5,773,919	178,333	64,285	203,515	.....	6,220,052
Germany.....	3,776,973	5,042,127	414,286	419,257	.....	9,652,643
Great Britain.....	15,813,197	2,066,217	145,716	3,362,276	.....	21,387,406
Greece.....	1,375,330	.....	.....	.....	.....	1,375,330
Holland.....	6,418,334	4,862,825	786,030	1,695,376	69,054	13,831,619
Irish Free State.....	740,419	303,750	.....	367,060	.....	1,411,229
Ireland (Northern).....	196,000	33,334	.....	235,180	.....	464,514
Italy.....	4,584,001	.....	.....	20,000	.....	4,604,001
Malta.....	89,600	.....	.....	.....	.....	89,600
Norway.....	1,282,960	445,200	.....	65,882	.....	1,794,042
Sweden.....	732,262	55,000	12,857	10,000	.....	810,119
Unknown.....	1,876,900	246,401	.....	92,393	.....	2,215,694
	51,416,009	17,563,000	2,301,481	7,542,806	94,038	78,917,334

HARBOUR RAILWAY TERMINALS

The railway traffic movement during the first four months of the year (viz. prior to the opening of navigation) showed a decrease of approximately 10% in the volume of operations as compared with the same period in the previous year. It is of interest to note that in spite of the general commercial depression, the average number of cars handled during the winter season on the Commissioners' railway amounted to more than 250 cars per day.

With the exception of June, which about equalled the same month in 1930, there was a continual and progressive decrease in railway operations until the end of October. The months of November and December witnessed an encouraging improvement in railway traffic.

Almost all sources of traffic contributed to the general decrease in this Department. Import and export traffic was substantially less than in 1930, as is evident from the decrease in number of cars handled at the sheds (31,530 cars in 1931 as against 36,136 cars in 1930). Local traffic, including interchange traffic, also furnished its quota of the decrease. To add to the difficulties with which the railway department had to contend was the unusual condition of low water in the ship channel in the Fall, which reflected on the operations through the diversion to other ports of a considerable number of cars of export freight which had been booked for export from Montreal.

Redeeming features in a year of exceptional conditions in transportation circles were the increase of 1,378 cars of grain more than in 1930, and an increase to 1,000 cars of traffic resulting from the export cattle movement. The returns show that of the decrease of 19,927 cars handled during the year, 12,057 were empty or non-revenue cars. The reduction in loaded cars was 7,870, or 5.5%, as compared with 1930.

Close supervision was exercised over the operations of the railway department in 1931 which resulted in considerable economies being effected. Locomotive hours were reduced

from 26,372 in 1930 to 22,382 in 1931, the latter figure being made up of 14,507 electric and 7,875 steam locomotive hours. During the year the electric locomotives travelled 42,166 miles.

Total number of cars handled in 1931 was 185,155, a decrease of 19,927 cars, or 9%, as compared with 1930.

In the month of August the locomotive round house and repair shop, previously operated as a separate unit under the control of the railway department, was amalgamated with the other machine shops of the Commissioners and placed under the jurisdiction of the mechanical department.

The following table gives the mileage of Harbour Railway tracks, and the number of cars handled during the past ten years:—

	Mileage of Harbour Railway	Number of cars handled by Commissioners
1922.....	58.77	200,593
1923.....	60.64	216,382
1924.....	63.24	225,377
1925.....	63.55	251,586
1926.....	65.19	205,481
1927.....	67.44	195,853
1928.....	67.99	240,622
1929.....	68.42	242,967
1930.....	69.28	205,082
1931.....	69.60	185,155

The extent of the Harbour Commissioners' railway tracks at the end of 1931 is as follows:—

	Lin. Ft.	Miles
South of Lachine Canal, Bickerdike Pier, Windmill Point Wharf and West.....	50,264	9.5197
To Guard Pier.....	10,400	1.9697
Sections 12 to 46, High Level, Main Line.	57,079	10.8104

	Lin. Ft.	Miles
To Piers, Elevators, Crossovers and Sidings, etc.....	130,184	24.6560
Sections 35 to 46, Low Level, Main Line..	10,080	1.9091
Sections 46 to 101, High Level, Main Line..	54,134	10.2526
To Wharves, Industries, etc.....	53,051	10.0475
At South Shore, St. Lambert.....	2,300	0.4356
<hr/>		
Grand Total Tracks, end of 1931.....	367,492	69.6006
Grand Total Tracks, end of 1930.....	365,813	69.2826
<hr/>		
Increase in 1931.....	1,679	0.3180

HARBOUR POLICE DEPARTMENT

The Harbour Commissioners' police department, which maintains day and night patrol from Windmill Point to Section 100, enforcing order and safeguarding life and property within the Harbour, carried out its usual duties during 1931.

During the season of navigation the force consisted of a chief, three captains, and forty-eight constables. In the winter season twenty-seven constables were employed.

During the year 152 arrests were made for various offences on the Harbour and on the Montreal Harbour Bridge. Sixteen deaths occurred on the Harbour during 1931, and fifty-seven accident cases were given first aid by the police department.

Carters to the number of 5,394, loading and delivering merchandise at various points along the waterfront, were checked by the traffic constables. Taxis to the number of 4,883 were checked on arrival and departure of passenger vessels.

The police car and two motor-cycles covered 61,014 miles during the year. The two motor-cycles used on the Harbour Bridge covered 22,123 miles.

COMMODITY TONNAGE STATEMENT

The most interesting fact about the movement of merchandise through the Harbour of Montreal in 1931 was the continuation of the steady increase which recent years have seen in tonnage of imports. Since 1928 import tonnage has been as follows:—

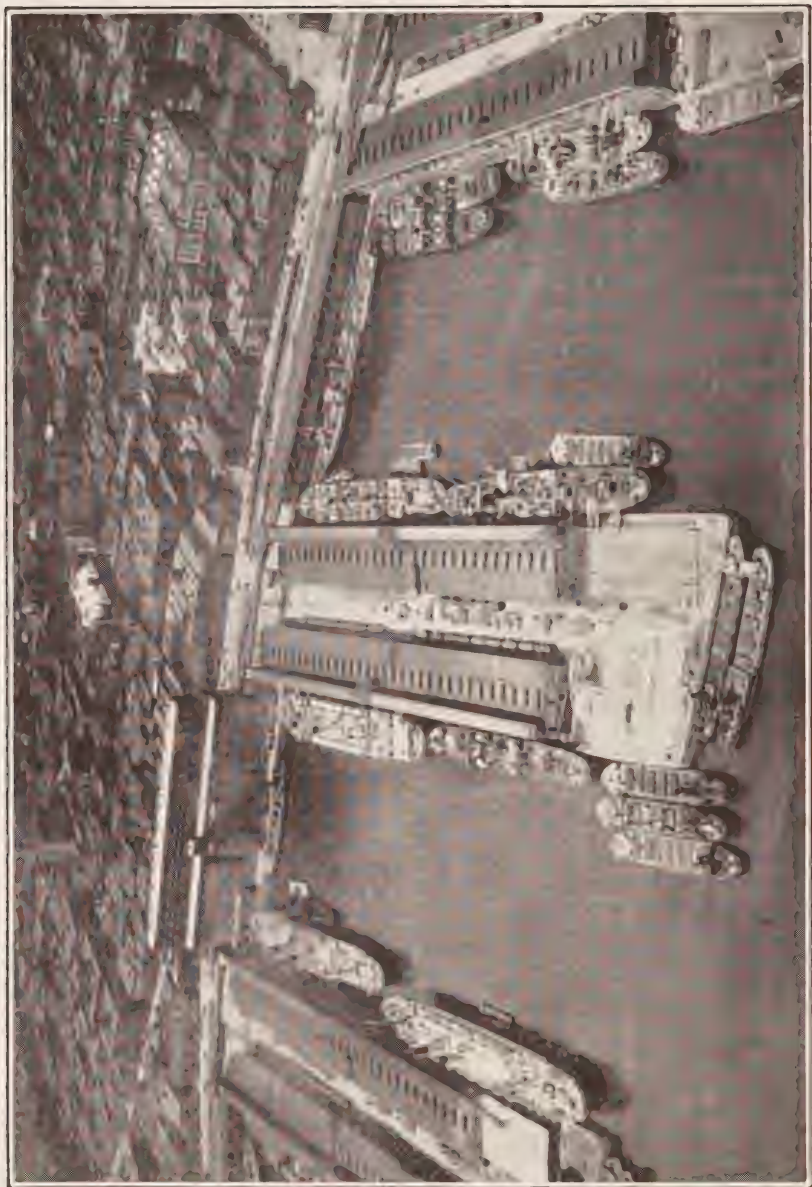
1928.....	2,543,685 tons
1929.....	3,256,991 “
1930.....	3,376,182 “
1931.....	3,568,542 “

This increase was mainly due to bulk commodities, notably oil (which increased by 445,961 tons), gasoline, woodpulp, corn, sugar, phosphates and sulphur. General cargo imports were about 48,000 tons less than in 1930. Imports of bananas from the British West Indies amounted to 33,682 tons.

Total tonnage of commodities in 1931 increased by 226,605 tons over the previous year, as the following comparative statement shows:—

	1930 tons	1931 tons
Imports.....	3,376,182	3,568,542
Exports.....	3,101,561	3,036,835
Domestic.....	3,210,026	3,308,997
	<hr/> 9,687,769	<hr/> 9,914,374

Exports decreased by 64,726 tons from the previous year's figures, the principal sources of this decrease having been in the following commodities:—automobiles and parts (76,384 tons), flour (74,162 tons), lumber (31,797 tons), fruit (17,480 tons), meat (16,233 tons), rubber manufactures (14,537 tons), hay (9,010 tons), cement (6,798 tons), asbestos fibre (5,599 tons), etc. A notable gain was recorded in the export of livestock, from 2,569 tons in 1930 to 10,254 tons in 1931. Grain exports increased by 120,927 tons, printing



AERIAL VIEW OF KING EDWARD PIER AND ELEVATOR NO. 1

paper by 9,635 tons and animal foods by 8,217 tons. The following increases in exports are worth recording:—

Exports	1930 tons	1931 tons
Oatmeal.....	nil	5,987
Nickel matte.....	61	5,353
Butter.....	198	4,962
Bran.....	709	4,290

Domestic tonnage total, viz., 3,308,997, also reached the highest figure in the port's history. Included in this list are the following important items, viz.: Bituminous coal, 1,380,219 tons; fuel oil, 275,396 tons; grain for local delivery, 262,517 tons; crude oil, 251,816 tons; gasoline, 243,643 tons; cement, 120,846 tons; crushed stone, 71,081 tons; refined sugar, 69,268 tons; sand, 62,754 tons; gypsum, 58,370 tons; lubricating oil, 45,626 tons; bunker oil, 28,310 tons; flour, 28,162 tons; anthracite coal, 24,715 tons; steel billets and blooms, 20,377 tons, etc.

While exact details of imports and exports are given in the ensuing tables, it is worth noting the extent of the movement of the more important commodities, viz.:—

Principal Imports

Petroleum Oil.....	1,386,553	tons
Anthracite Coal.....	743,475	"
Raw Sugar.....	219,718	"
Gasoline.....	127,570	"
Corn.....	124,480	"
Bituminous Coal.....	118,066	"
Woodpulp.....	50,619	"
Bananas.....	33,682	"
Phosphate.....	33,441	"
Sulphur.....	33,103	"
Pulpboard.....	32,378	"
Dry goods.....	31,285	"
Manganese Ore.....	25,136	"

Steel Sheets.....	24,142 tons
Sand.....	23,388 "
Molasses.....	22,950 "
Iron Ore.....	21,688 "
Salt.....	19,387 "
Steel Plates.....	18,912 "
Tinplate.....	18,850 "
Toys.....	17,257 "
Glass Sheets.....	13,591 "
Dried Fruit.....	12,506 "
Liquors.....	12,022 "
Tea.....	10,435 "
Glassware.....	9,778 "
Raw Fruit.....	9,750 "
Wines.....	9,593 "
Flax Seed.....	9,540 "
Firebrick.....	8,649 "
Machinery.....	8,425 "
Fruit in tins.....	8,362 "
Earthenware.....	8,334 "
Iron and Steel Bars.....	7,560 "
Binder Twine.....	7,297 "
Whiting.....	6,358 "
Tiles.....	6,031 "
Garden Bulbs.....	6,012 "
Wire Rods.....	5,595 "
Sheet Iron.....	4,735 "
Muriate of Potash.....	4,723 "
Steel Beams.....	4,492 "
Coffee.....	4,479 "
Yarns.....	4,317 "
Nitrate of Soda.....	4,216 "
Structural Steel.....	4,187 "
Millinery.....	4,097 "
Edible Nuts.....	4,055 "
Jute Cloth.....	4,047 "
Crockery.....	3,939 "
Wire Coils.....	3,723 "

Cocoa Beans.....	3,662 tons
Speigeleisen.....	3,506 "

Principal Exports

Wheat.....	1,548,674 tons
Barley.....	421,575 "
Flour.....	228,378 "
Oats.....	131,239 "
Rye.....	64,441 "
Printing Paper.....	55,955 "
Lard.....	54,236 "
Raw Fruit.....	46,375 "
Cheese.....	36,567 "
Automobiles and Parts.....	28,040 "
Cured Meat.....	26,064 "
Woodpulp.....	23,566 "
Hay.....	17,577 "
Rolled Oats.....	17,513 "
Liquors.....	17,494 "
Cement.....	15,652 "
Manufactures of Rubber.....	12,448 "
Copper Matte.....	12,298 "
Copper Bars.....	11,762 "
Cattle.....	10,254 "
Spelter.....	9,829 "
Oilcake.....	9,022 "
Animal Foods.....	8,681 "
Cereals.....	8,583 "
Acetic Acid.....	6,819 "
Asbestos Fibre.....	6,281 "
Oatmeal.....	5,978 "
Nickel Matte.....	5,353 "
Butter.....	4,962 "
Ship's Stores.....	4,845 "
Wallboard.....	4,845 "
Paper, Miscellaneous.....	4,360 "
Catsup.....	4,348 "

Bran.....	4,290 tons
Milk in tins.....	4,171 "
Binder Twine.....	3,317 "
Meat in tins.....	2,894 "
Fresh or Frozen Meat.....	2,851 "
Iron Piping.....	2,779 "
Soups in tins.....	2,778 "
Phosphorus.....	2,777 "
Buckwheat.....	2,529 "
Wrapping Paper.....	2,526 "
Match Splints.....	2,489 "
Soap.....	2,287 "
Sundries.....	2,225 "
Plasterboard.....	2,193 "
Sulphate of Ammonia.....	2,184 "
Cured Fish.....	2,147 "
Agricultural Implements.....	2,127 "
Vegetables in tins.....	2,122 "
Middlings.....	2,052 "
Stoves.....	2,020 "

COLD STORAGE WAREHOUSE

The year's operation at the Commissioners' warehouse and cold storage plant was carried out according to regular routine. The excellence of the service provided has been favourably commented on by storers, and despite the unfavourable conditions which prevailed in the produce markets during the year, the business of the plant was on an extensive scale. The Commissioners look for an increase of business at the warehouse as soon as a return to stability of produce prices makes possible the resumption of large-scale storage of perishable foodstuffs. The decrease in recent years in export of cheese and butter from the Port has reacted unfavourably on the business of the warehouse, and the return to normal exports of these commodities will undoubtedly provide valuable additional revenue for this important and well-equipped Harbour utility.

IMPORTS

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Acid, Acetic.....	24	...	...	24
“ Boric.....	107	...	...	107
“ Carbolic.....	51	2	...	49
“ Citric.....	209	3	56	150
“ Stearic.....	252	11	9	232
“ Tartaric.....	270	3	101	166
“ Various, N.O.S.....	417	164	91	162
Advertising Matter.....	245	79	62	104
Adding Machines.....	13	...	13	...
Aeroplanes and Parts.....	956	215	...	741
Agricultural Implements.....	69	64	...	5
Alum.....	215	6	70	139
Alumina Hydrate.....	10	6	...	4
Alumina, Sulphate of.....	1,188	1,021	161	6
Alumino Ferric.....	730	...	...	730
Aluminum Foil.....	146	20	93	33
“ Scrap.....	68	68	...	...
“ Sheets.....	244	18	209	17
“ Strips.....	27	...	27	...
“ Ware.....	40	14	1	25
Ammonia.....	56	8	2	46
“ Carbonate of.....	56	5	2	49
“ Muriate of.....	380	...	317	63
“ Nitrate of.....	240	240	...	...
“ Sulphate of.....	1,170	25	850	295
Ammunition.....	14	14	...	...
Anchors.....	42	...	...	42
Animal Foods, N.O.S.....	85	49	14	22
Animals, Small.....	34	...	...	34
Antimony.....	62	1	9	52
Arrowroot.....	113	...	3	110
Artists' Materials.....	52	11	25	16
Asbestos, Mfrs. of.....	229	5	34	190
Asphalt.....	37	...	...	37
Automobiles and Parts.....	2,688	527	1	2,160
Axles.....	12	4	...	8
Baby Carriages.....	565	15	173	377
Bags and Bagging.....	36	4	2	30
Bamboo.....	62	...	...	62

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Bananas.....	33,682	...	...	33,682
Barium, Carbonate.....	337	74	...	263
Barrels, etc., Empty.....	994	926	6	62
Barytes.....	967	54	166	747
Basketware.....	861	431	213	217
Bath Brick.....	10	...	2	8
Batteries.....	11	8	...	3
Battery Plates.....	674	...	674	...
Beads, Glass.....	18	7	...	11
Beans.....	78	6	36	36
Bedding.....	5	2	...	3
Beer Colouring.....	8	8	...	...
Beers.....	909	14	626	269
Bees' Wax.....	62	...	...	62
Bells.....	26	11	...	15
Belting.....	36	19	3	14
Bicycles and Parts.....	256	170	23	63
Bird Cages.....	220	150	27	43
Bird Seed, etc.....	98	48	14	36
Biscuits.....	610	158	231	221
" Dog.....	259	38	164	57
Black Lead.....	4	...	...	4
Blanc Fixe.....	316	13	...	303
Bleaching Powders.....	935	134	177	624
Boats, N.O.S.....	45	19	11	15
Boiler Covering.....	36	25	...	11
" Lagging.....	159	11	...	148
" Parts.....	78	...	...	78
Bone Ash.....	15	8	...	7
" Black.....	10	...	...	10
Books.....	2,583	477	1,411	695
Boots and Shoes.....	950	349	193	408
Bottles, Common, empty.....	543	101	290	152
" Superior, empty.....	175	35	30	110
" Thermos.....	676	58	578	40
Bottlers' Supplies.....	20	...	9	11
Boxes, Empty.....	95	39	14	42
Brass, Mfrs. of.....	165	47	17	101
" Rods.....	61	6	...	55
" Sheets.....	21	2	...	19
" Tubing.....	248	80	3	165
Bread.....	86	33	40	13

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Brick, Acid proof.....	22	22	...	...
" Fire.....	8,649	2,099	2	6,548
" Glazed.....	74	...	...	74
Bronze, Mfrs. of.....	122	33	17	72
" Powder.....	28	14	1	13
" Wire.....	67	15	1	51
Brooms and Brushes.....	251	118	21	112
Burlap.....	498	221	36	241
Butanol.....	81	81	...	...
Butter.....	58	...	...	58
Buttons.....	69	4	...	65
Cable.....	38	2	...	36
Calcium Carbide.....	363	...	11	352
" Chloride of.....	228	...	...	228
" Nitrate of.....	10	...	...	10
Candles.....	81	10	37	34
Canned Goods.....	54	13	4	37
Capsules.....	129	40	14	75
Caramel.....	15	14	...	1
Carbon.....	128	57	71	...
Cardboard.....	342	170	53	119
Carpets.....	1,857	1,198	321	338
Casein.....	16	8	...	8
Casings, Sausage.....	132	10	41	81
Castings.....	366	317	...	49
Celluloid.....	34	27	...	7
" Mfrs. of.....	72	36	15	21
Cement.....	120	...	...	120
Chains.....	269	19	18	232
Chalk.....	98	...	26	72
Chalk, Precipitated.....	62	5	...	57
Charcoal.....	394	56	56	282
Cheese.....	585	126	99	360
Chemicals, N.O.S.....	2,807	919	591	1,297
Chicory.....	39	16	2	21
Chinaware.....	2,615	587	53	1,975
Chlorides, N.O.S.....	37	...	37	...
Church Ornaments.....	185	82	3	100
Cigars and Cigarettes.....	95	71	1	23
Clay, Burnt.....	70	...	7	63
" China.....	1,735	169	17	1,549

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Clay, Fire.....	405	206	5	194
“ Unmanufactured.....	60	60	...	...
Clocks.....	822	172	168	482
Clothes Pins.....	57	3	...	54
Coal, Anthracite.....	743,475	...	...	743,475
“ Bituminous.....	118,066	...	...	118,066
Cocoa.....	587	7	285	295
“ Beans.....	3,662	2	849	2,811
“ Butter.....	1,762	68	1,233	461
Cocoanuts.....	2,306	...	342	1,964
Coffee.....	4,479	198	594	3,687
“ Essence.....	302	248	32	22
Coin Blanks, Nickel.....	23	23	...	...
Coke.....	358	...	...	358
Confectionery.....	1,619	401	833	385
Copperas.....	37	...	...	37
Copper, Mfrs. of.....	45	32	4	9
“ Oxide of.....	8	1	...	7
“ Rollers.....	33	33	...	...
“ Sheets.....	34	4	19	11
“ Sulphate of.....	441	219	22	200
“ Tubing.....	48	23	...	25
Cordage.....	54	4	4	46
Corks.....	73	2	14	57
Corkwood.....	1,459	27	39	1,393
“ Scrap.....	2,838	456	...	2,382
Corn.....	124,480	...	...	124,480
Cotton, Absorbent.....	173	12	2	159
“ Dust.....	16	16	...	...
“ Raw.....	1,334	1,068	14	252
“ Waste.....	676	489	17	170
Cream Separators.....	244	128	27	89
Cream of Tartar.....	177	...	99	78
Creosol.....	32	32	...	...
Crockery.....	3,939	1,202	1,146	1,591
Crucibles.....	175	71	30	74
Cutlery.....	161	62	25	74
Cyanides.....	355	334	...	21
Cylinders, Gas.....	66	57	1	8
Degras.....	124	...	...	124
Dextrine.....	240	28	37	175

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Disinfectants.....	210	22	48	140
Drugs.....	958	68	35	855
Druggist Sundries.....	582	180	176	226
Dry Colours.....	1,768	385	241	1,142
Dry Goods.....	31,285	10,789	5,788	14,708
Dump Cars.....	12	11	...	1
Dyes.....	766	207	161	398
Earth, Refining.....	34	...	34	...
Earthenware.....	8,334	3,759	1,744	2,831
Effects, Settlers'.....	2,228	1,254	211	763
Electrical Apparatus.....	2,366	1,412	152	802
Electric Bulbs.....	22	...	21	1
Emery Cloth.....	52	2	4	46
“ Powder.....	40	27	11	2
Enamelware.....	1,787	140	312	1,335
Engines, Oil.....	123	96	8	19
Exhibits.....	143	7	1	135
Explosives.....	19	19	...	...
Extracts.....	95	23	5	67
Farina.....	24	2	22	...
Feathers.....	6	4	...	2
Felt.....	207	41	13	153
Ferro Chrome.....	18	...	...	18
“ Manganese.....	164	100	...	64
Fertilizers, N.O.S.....	1,765	...	1,754	11
Fibres.....	180	62	36	82
Filtermass.....	107	19	2	86
Firearms.....	102	88	...	14
Fireworks.....	7	...	...	7
Fish, Cured.....	1,922	1,118	391	413
“ Fresh or Frozen.....	23	...	...	23
“ in tins.....	2,466	1,307	582	577
“ Paste.....	10	...	10	...
“ Plates.....	13	...	...	13
Fishing Apparatus.....	143	94	25	24
Flax Seed.....	9,540	4	...	9,536
Flour, Bone.....	20	20	...	...
“ N.O.S.....	513	397	...	116
“ Potato.....	874	138	204	532
“ Sago.....	60	28	...	32

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Fluorspar.....	1,259	...	...	1,259
Fly Catchers.....	1,152	139	75	938
Forgings.....	268	71	5	192
Fruit, Dried.....	12,506	1,462	4,215	6,829
" in brine.....	1,560	...	344	1,216
" in tins.....	8,362	499	1,277	6,586
" Juices.....	56	6	19	31
" Pulp.....	501	197	189	115
" Raw.....	9,750	726	...	9,024
" Syrups.....	20	...	...	20
Fullers Earth.....	679	62	257	360
Furnace Parts.....	41	40	1	...
Furniture.....	2,819	1,394	449	976
Furs.....	243	72	1	170
Garden Bulbs.....	6,012	2,862	1,062	2,088
Gasoline.....	127,570	...	...	127,570
Gelatine.....	466	109	24	333
Ginger.....	210	17	28	165
Gingerbeer Essence.....	31	...	31	...
Glass Jars.....	35	2	...	33
" Powdered.....	3	3	...	...
" Sheets.....	13,591	3,614	2,347	7,630
Glassware.....	9,778	2,286	2,111	5,381
Glue.....	746	129	280	337
Glycerine.....	1,607	162	5	1,440
Goat Skins.....	29	1	...	28
Granite Chips.....	19	...	...	19
" Blocks.....	1,007	768	...	239
" Monuments.....	1,630	668	96	866
Grease.....	254	78	1	175
Grindstones.....	144	23	...	121
Grit.....	25	25	...	...
Groceries, N.O.S.....	92	25	16	51
Gums.....	272	143	5	124
Gypsum.....	130	5	...	125
Hair.....	274	271	...	3
Hardware, N.O.S.....	1,947	636	433	878
Hatters' Fur.....	131	108	...	23
Herbs.....	16	2	8	6
Hides.....	521	423	...	98

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Hollow Ware.....	921	308	114	499
Hops.....	313	30	5	278
Horses.....	31	13	...	18
Inks.....	62	5	11	46
Insect Powders.....	4	...	3	1
Instruments, Musical.....	434	277	67	90
" Scientific.....	110	48	2	60
Insulators.....	489	40	26	423
Iron and Steel Bars.....	7,560	943	144	6,473
" " Mfrs. of.....	2,334	1,163	107	1,064
Iron Ore.....	21,688	4	21,655	29
" Pig.....	1,952	176	...	1,776
" Pipe.....	770	42	249	479
" Sand.....	88	15	5	68
" Sheet.....	4,735	86	347	4,302
" Skelp.....	3,495	1,780	...	1,715
" Sulphate of.....	6	...	...	6
Jewellery.....	29	15	5	9
Jute Cloth.....	4,047	232	65	3,750
" Waste.....	17	17	...	...
" Webbing.....	18	1	...	17
Lamp Black.....	5	...	...	5
Lamps and Lanterns.....	174	23	8	143
Lard.....	4	4	...	...
Lawn Mowers.....	6	5	...	1
Lead, Acetate of.....	18	...	...	18
" Mfrs. of.....	52	7	8	37
" Nitrate of.....	53	4	3	46
" Oxide.....	72	...	71	1
" Pig.....	112	...	56	56
" Pipe.....	15	...	...	15
" Sheet.....	54	23	5	26
Leather, in bales.....	251	212	15	24
" Mfrs. of N.O.S.....	865	295	107	463
Leaves, dried.....	38	3	15	20
Lentils.....	48	3	20	25
Life Buoys.....	7	4	...	3
Lime Juice.....	304	...	56	248
" Bisulphate of.....	16	...	...	16

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Lime Carbonate of.....	57	...	21	36
“ Chloride of.....	304	15	15	274
“ Phosphate of.....	46	1	...	45
Lincrusta.....	61	...	1	60
Linoleum.....	308	71	176	61
Liquors, Intoxicating.....	12,022	309	7,846	3,867
Litharge.....	386	46	10	330
Lithopone.....	2,742	472	158	2,112
Lobsters, in tins.....	32	...	...	32
Macaroni.....	32	...	...	32
Machinery.....	8,425	5,020	403	3,002
Machines, Sewing.....	114	114	...	...
“ Washing.....	20	20	...	...
Magnesia.....	117	36	6	75
“ Carbonate of.....	122	33	...	89
“ Chloride of.....	172	...	...	172
“ Calcium.....	22	...	...	22
Magnesite.....	79	...	...	79
Mahogany Logs and Boards,...	42	24	...	18
Malt.....	140	...	...	140
Malt Extract.....	82	10	26	46
Manganese Ore.....	25,136	7	25,129	...
“ Silica.....	18	6	...	12
Marble.....	459	36	7	416
Marble Chips.....	3,220	...	...	3,220
Marble Slabs.....	1,833	389	...	1,444
Marble, Mfrs. of.....	542	92	1	449
Meal, Bone.....	223	223	...	..
“ N.O.S.....	224	33	1	190
Meat, Cured.....	12	...	12	...
“ Extracts.....	383	1	57	325
“ Fresh or Frozen.....	382	114	...	268
“ in tins.....	2,524	61	218	2,245
Meters.....	35	17	...	18
Mica.....	2	2	...	...
Millboards.....	9	...	...	9
Millinery.....	4,097	2,969	283	845
Mineral Black.....	10	10	...	...
Mineral Waters.....	2,938	561	108	2,269
Mirrors.....	21	3	1	17
Molasses.....	22,950	1	88	22,861

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Molassine Meal.....	25	...	...	25
Moss.....	58	...	...	58
Motorboats.....	165	53	...	112
Motorcycles.....	123	94	5	24
Mushrooms.....	266	38	71	157
Mustard.....	278	4	187	87
" Bran.....	3	...	...	3
" Seed.....	130	22	75	33
Nails.....	123	2	...	121
Naphthaline.....	222	4	36	182
Nickel, Mfrs of.....	4	4	...	...
" Sulphate of.....	15	3	...	12
Nicotine, Sulphate of.....	5	...	...	5
Notions.....	1,793	640	346	807
Nuts and Bolts.....	6	5	...	1
Nuts, Edible.....	4,055	270	1,497	2,288
Nutmegs.....	31	...	15	16
Oak Logs and Boards.....	42	42	...	...
Oakum.....	54	1	...	53
Oatmeal.....	17	...	...	17
Oil, Bean.....	430	...	...	430
" Castor.....	613	177	110	326
" Cocoanut.....	404	10	8	386
" Cod Liver.....	641	300	110	231
" Colza.....	34	...	...	34
" Cottonseed.....	1,348	806	4	538
" Essential.....	145	12	3	130
" Linseed.....	847	...	100	747
" Lubricating.....	371	89	178	104
" Mineral.....	118	...	115	3
" Olive.....	1,249	57	291	901
" Palm.....	334	311	...	23
" Peanut.....	1,199	560	...	639
" Petroleum.....	1,386,553	...	...	1,386,553
" Rape.....	70	22	28	20
" Seal.....	173	10	7	156
" Various.....	393	119	130	144
Oilcloth.....	15	3	3	9
Oilcake Meal, N.O.S.....	38	18	20	...
Oilmen's Stores.....	267	27	116	124

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Olives.....	747	300	366	81
Oyster Shells.....	106	...	101	5
Paints.....	215	42	37	136
Paper Bags.....	113	53	55	5
“ Greaseproof.....	66	2	5	59
“ Mfrs of.....	2,922	639	467	1,816
“ Parchment.....	23	5	...	18
“ Printing.....	713	245	402	66
“ Stock.....	1,126	1,077	...	49
“ Wall.....	521	66	58	397
“ Wrapping.....	991	126	219	646
Paris Green.....	27	...	5	22
Paste.....	11	6	3	2
Peanuts.....	47	...	...	47
Peas.....	213	20	7	186
“ Split.....	122	...	17	105
Peat Moss.....	470	321	51	98
Pebbles.....	1,989	1,989	...	...
Peels.....	600	1	513	86
Pepper.....	418	6	84	328
Perfumery.....	303	68	18	217
Peroxide.....	30	7	1	22
Phosphate.....	33,441	...	33,441	...
Phosphates, N.O.S.....	70	60	...	10
Photo Sundries.....	107	90	6	11
Piassaya.....	29	8	...	21
Pickles.....	59	4	25	30
Pictures and Frames.....	502	118	90	294
Pimento.....	223	8	75	140
Pipes, Tobacco.....	253	32	3	218
“ “ Clay.....	26	3	1	22
Pitch.....	147	72	...	75
Plaster.....	354	...	...	354
Plasticine.....	10	4	...	6
Plumbago.....	20	4	...	16
Plywood.....	5	3	...	2
Polishes.....	314	41	181	92
Potash Carbonate.....	67	18	...	49
“ Caustic.....	238	...	10	228
“ Chlorate of.....	258	50	...	208
“ Muriate of.....	4,723	800	3,364	559

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Potash, Nitrate of.....	444	...	214	230
“ Sulphate of.....	1,410	402	1,000	8
“ N.O.S.....	2,136	1,156	...	980
Poultry.....	15	...	...	15
Preserves, N.O.S.....	464	49	262	153
Printed Matter.....	93	43	12	38
Propellers.....	30	4	...	26
Pulleys and Blocks.....	37	22	1	14
Pulpboard.....	32,378	7	31,458	913
Pulpstones.....	20	20	...	...
Pumicestone.....	435	...	22	413
Putty.....	542	42	39	461
Quarries.....	355	2	179	174
Rabbits, Frozen.....	31	...	...	31
“ in tins.....	2	...	...	2
Radios and Parts.....	7	3	...	4
Rags.....	1,852	72	79	1,701
Rattans.....	23	15	2	6
Razors and Parts.....	20	11	1	8
Rennett.....	7	6	...	1
Resin.....	64	...	31	33
Rice.....	1,308	14	99	1,195
“ Unhulled.....	1,444	...	...	1,444
Rivets.....	11	...	...	11
Roots.....	41	35	...	6
Rope.....	299	44	25	230
Rubber, Mfrs of.....	400	149	62	189
Saddlery.....	21	11	2	8
Sal Ammoniac.....	176	4	4	168
Salt Cake.....	77	...	17	60
Salt, Coarse.....	19,387	...	44	19,343
Salt, Fine.....	453	3	7	443
Saltpetre.....	9	3	...	6
Salts, Bath.....	44	12	29	3
“ Epsom.....	852	134	209	509
“ Gravy.....	30	29	1	...
“ Glauber.....	587	22	56	509
“ Health.....	293	28	265	...
“ Nitrate.....	12	...	12	...
“ Rochelle.....	74	...	2	72

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Sand.....	23,388	8	2	23,378
Sandpaper.....	81	10	2	69
Sauces.....	537	73	319	145
Saw Blades.....	27	27	...	...
Sawdust.....	95	66	...	29
Scales.....	68	17	39	12
Seed, Bird.....	12	...	...	12
“ Caraway.....	50	2	21	27
“ Celery.....	13	...	...	13
“ Coriander.....	10	...	10	...
“ Garden.....	299	187	58	54
“ Poppy.....	22	...	6	16
“ Rape.....	82	1	74	7
“ Sunflower.....	24	...	...	24
“ N.O.S.....	362	87	36	239
Sheep Dip.....	6	1	...	5
“ Skins.....	106	78	...	28
Shellac.....	4	...	...	4
Shoe Shanks.....	5	...	...	5
Silica.....	17	17	...	...
Silkwaste.....	30	12	17	1
Silverware.....	487	202	30	255
Sisal.....	52	17	...	35
Slag.....	560	...	...	560
Slate.....	118	46	5	67
Soap, Castille.....	367	91	144	132
“ Common.....	47	20	22	5
“ Liquid.....	20	2	13	5
“ Toilet.....	434	256	101	77
Soda Ash.....	18	18	...	...
“ Benzoate of.....	15	...	...	15
“ Bicarbonate of.....	15	15	...	...
“ Bichromate of.....	58	15	...	43
“ Caustic.....	260	...	...	260
“ Chlorate of.....	713	79	...	634
“ Chloride of.....	350	350	...	...
“ Cyanide of.....	259	163	96	...
“ Nitrate of.....	4,216	1,118	325	2,773
“ N.O.S.....	236	38	25	173
“ Phosphate of.....	1,236	876	76	284
“ Prussiate of.....	130	32	...	98
“ Silicate of.....	42	...	...	42

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Soda, Sulphate of.....	703	80	149	474
“ Sulphide of.....	677	142	535	...
Soot.....	6	1	...	5
Soups, in tins.....	4	...	...	4
Speigeleisen.....	3,506	...	1,753	1,753
Spelter.....	120	...	...	120
Spices.....	351	17	80	254
Sponges.....	75	19	...	56
Sporting Goods.....	418	250	44	124
Starch.....	101	2	22	77
Statice.....	15	4	...	11
Stationery.....	793	271	287	235
Statuary.....	496	53	9	434
Stearine.....	29	11	7	11
Steel Angles.....	3,263	228	...	3,035
“ Balls.....	952	816	...	136
“ Bands.....	386	63	...	323
“ Beams.....	4,492	597	460	3,435
“ Billets and Blooms.....	1,164	1,002	14	148
“ Channels.....	3,068	399	661	2,008
“ Discs.....	98	51	...	47
“ Hoops.....	882	121	...	761
“ Joists.....	655	134	...	521
“ Plates.....	18,912	5,860	897	12,155
“ Rails.....	177	...	...	177
“ Rods.....	6	2	3	1
“ Rollers.....	98	98	...	...
“ Scrap.....	2,697	...	...	2,697
“ Sheets.....	24,142	433	90	23,619
“ Strips.....	577	124	6	447
“ Structural.....	4,186	149	59	3,978
“ Tape.....	15	...	...	15
“ Tees.....	146	57	...	89
“ Tubing.....	1,350	449	35	866
“ Tyres.....	1,250	243	...	1,007
Stone, Mfrs. of.....	435	5	...	430
“ Unmanufactured.....	1,926	38	...	1,888
Stoves.....	13	10	...	3
Strawboard.....	484	19	...	465
“ Covers.....	73	36	...	37
Sugar of Milk.....	258	...	...	258
“ Raw.....	219,718	...	...	219,718

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Sugar, Refined.....	986	242	741	3
Sulphur.....	33,103	5,138	7,777	20,188
Sundries.....	2,237	298	754	1,185
Superphosphate.....	3,145	...	2,630	515
Syrups.....	72	26	36	10
Syrup, Corn.....	209	7	147	55
Talc.....	289	...	88	201
Tallow.....	6	6	...	...
Tanks.....	34	...	16	18
Tanners' Bate.....	25	2	8	15
Tanners' Extracts.....	94	22	...	72
Tapioca.....	34	...	...	34
Tar.....	193	1	...	192
Tea.....	10,435	498	1,798	8,139
Threads.....	452	35	29	388
Tiles.....	6,031	385	536	5,110
Timonax.....	12	...	...	12
Tins, empty.....	386	8	29	349
Tin Ingots.....	803	8	...	795
Tinplate.....	18,850	2,297	1,497	15,056
Tin Tubes.....	68	4	...	64
Tinware.....	254	41	95	118
Tobacco Leaf.....	126	25	...	101
Tobacco, Mfrs of.....	209	46	13	150
Tobacconist Sundries.....	932	66	6	860
Toilet Articles.....	153	...	...	153
Tomato Paste.....	181	...	...	181
Tools.....	443	67	143	233
Toys.....	17,257	2,514	5,185	9,558
Tractors and Parts.....	38	...	...	38
Trucks.....	459	50	7	402
Twine Binder.....	7,297	7	6,360	930
" Cotton.....	133	33	36	64
" Hemp.....	15	...	2	13
" Jute.....	122	4	...	118
Typewriters.....	14	14	...	...
Umbrellas and Parts.....	6	2	...	4
Valises.....	255	41	37	177
Valves.....	133	11	1	121

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Varnishes.....	48	5	4	39
Vegetables, in brine.....	143	30	88	25
" in tins.....	800	65	14	721
" Raw.....	3,169	1,186	97	1,886
Vegetable Fat.....	230	...	...	230
Vinegar, in barrels.....	19	...	14	5
" in glass.....	18	2	7	9
Wadding.....	18	3	15	...
Waggon.....	86	86	...	...
Watches.....	7	1	...	6
Wax.....	928	15	5	908
Wheels.....	236	143	...	93
Whiting.....	6,358	2,811	676	2,871
Willows.....	6	6	...	...
Window Frames.....	529	386	8	135
" Rollers.....	18	11	3	4
Wines.....	9,593	132	1,519	7,942
Wire, Barbed.....	195	1	176	18
" Cloth.....	89	18	1	70
" Coils.....	3,723	424	241	3,058
" in bbls.....	284	143	123	18
" Mfrs. of.....	89	19	15	55
" Netting.....	241	14	31	196
" Rods.....	5,595	796	1,680	3,119
" Rope.....	271	119	32	120
Woodenware.....	708	361	160	187
Woodpulp.....	50,619	...	44,520	6,099
Woodwool.....	6	6	...	...
Wool.....	1,739	1,518	146	75
" Grease.....	84	...	23	61
" Greasy.....	73	54	...	19
" Slips.....	67	67	...	...
" Tops and Noils.....	1,759	1,518	199	42
" Waste.....	242	136	12	94
Yarns.....	4,316	2,491	922	903
Yeast.....	25	20	...	5
Zinc Chloride.....	55	17	30	8
" Oxide of.....	1,188	319	261	608
" Plates.....	34	...	...	34

Distribution after Import

COMMODITY	Total Tons	Rail	Vessel	Other
Zinc Sulphate.....	292	...	92	200
“ Sulphide.....	83	...	...	83
“ Sheets.....	437	52	17	368
“ White.....	904	...	3	901
	3,568,542	126,649	260,516	3,181,377

EXPORTS

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Acetic Acid.....	6,819	6,819	...	...
Acids, Various.....	30	16	...	14
Adding Machines.....	33	33	...	...
Advertising Matter.....	131	56	51	24
Aeroplanes and Parts.....	78	9	...	69
Agricultural Implements.....	2,127	1,818	288	21
Alcohol, Industrial.....	37	3	...	34
Alumina, Sulphate of.....	76	...	...	76
Aluminum Bars.....	104	104	...	...
“ Ingots.....	54	49	5	...
“ Powder.....	3	...	...	3
“ Scraps.....	379	54	319	6
“ Sheets.....	657	275	351	31
“ Ware.....	33	18	14	1
“ Wire.....	31	31	...	...
Ammonia.....	15	2	7	6
“ Sulphate of.....	2,184	2,184	...	...
Ammunition.....	27	15	...	12
Animal Foods, N.O.S.....	8,681	2,915	513	5,253
Apple Juice.....	78	78	...	...
Asbestos Cement.....	203	201	...	2
“ Fibre.....	6,281	6,281	...	...
“ Mfrs. of.....	29	6	...	23
“ Roofing.....	66	66	...	...
“ Shingles.....	322	20	...	302

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Asphalt.....	85	...	...	85
“ Shingles.....	49	...	...	49
Automobiles and Parts.....	28,040	23,981	589	3,470
Automobile Springs.....	87	28	11	48
Baby Carriages.....	8	6	1	1
Bags and Bagging, Jute.....	757	26	7	724
Bags, Paper.....	48	...	...	48
Baking Powder.....	104	15	77	12
Barley Meal.....	107	102	...	5
Barn Door Hangers.....	21	21	...	...
Barrels and Drums, empty.....	1,037	192	27	818
Basketware.....	7	7	...	...
Batteries.....	255	76	88	91
Beans.....	36	11	...	25
Bedding.....	901	74	2	825
Bee Comb Foundation.....	5	1	...	4
Beers.....	158	1	...	157
Bells.....	7	...	...	7
Belting.....	16	5	11	...
Bicarbonate of Soda.....	23	1	...	22
Bicycles and Parts.....	37	11	25	1
Biscuits.....	92	70	...	22
Blackboards.....	17	8	...	9
Blocks, Maple.....	69	54	...	15
Boats.....	93	80	...	13
Boiler Parts.....	81	50	...	31
Bone Black.....	111	111	...	...
Bone Meal.....	7	...	...	7
Books.....	89	61	13	15
Boots and Shoes.....	23	8	1	14
Bottles, empty.....	369	216	4	149
Bottling Supplies.....	220	8	...	212
Box Board.....	1,931	1,667	264	...
Boxes, empty.....	186	22	13	151
Bran.....	4,290	634	112	3,544
Brass, Mfrs. of.....	6	1	2	3
“ Scrap.....	112	...	...	112
Bronze, Mfrs. of.....	10	...	...	10
“ Powder.....	116	4	...	112
Brooms and Brushes.....	122	56	58	8
Bullion.....	75	75	...	...

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Butter.....	4,962	895	...	4,067
Buttermilk.....	186	127	...	59
Buttons.....	3	3	...	...
Cable.....	114	24	...	90
Canned Goods, N.O.S.....	762	232	495	35
Capsules.....	61	12	37	12
Captax.....	80	62	18	...
Carbide.....	534	534	...	...
Carborundum Sand.....	443	443	...	...
Carbon Black.....	96	96	...	...
Cardboard.....	41	5	...	36
Carpets.....	17	10	...	7
Carriages.....	19	8	...	11
Cash Registers.....	29	...	29	...
Casings, Sausage.....	1,185	656	169	360
Castings.....	326	299	4	23
Catsup.....	4,348	712	3,563	73
Cattle.....	10,254	10,240	...	14
Cement, Building.....	15,652	13	...	15,639
Cement, N.O.S.....	44	34	3	7
Cereals.....	8,583	8,436	1	146
Chains.....	602	136	466	...
Cheese.....	36,567	2,947	77	33,543
Chemicals, N.O.S.....	98	69	...	29
Chinaware.....	17	15	...	2
Church Ornaments.....	4	2	...	2
Clay, Fire.....	2	...	...	2
Clocks.....	53	33	...	20
Clothespins.....	309	1	...	308
Coal.....	28	...	...	28
Cobalt Ore.....	652	652	...	...
“ Oxide.....	84	84	...	...
Coke.....	60	...	...	60
Confectionery, N.O.S.....	388	199	127	62
Coffee.....	8	...	...	8
Copper Bars.....	11,762	10,243	1,519	...
“ Bricks.....	34	17	...	17
“ Ingots.....	280	56	224	...
“ Mfrs. of.....	6	2	4	...
“ Matte.....	12,298	12,298	...	...
“ Rods.....	1,864	...	...	1,864

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Copper Scrap.....	170			170
“ Sheets.....	1,339	1,337	2	
“ Slabs.....	126	126		
“ Wire.....	328	60	38	230
Cordage.....	26	8		18
Cork, Mfrs. of.....	66			66
Corn, Cracked.....	24			24
“ Meal.....	49	2		47
“ Starch.....	46	45		
Cotton, Raw.....	20		7	13
“ Waste.....	141	6		135
Cyanide.....	382	382		
Cylinders, Gas.....	33		2	31
Doors.....	24	17	3	4
Dowels.....	157	153		4
Drugs and Medicines.....	335	163	91	81
Druggists' Sundries.....	1,208	833	136	239
Dry Colours.....	83		71	12
Dry Goods.....	1,880	1,285	26	569
Dyes.....	18		11	7
Dynamite.....	186	62		124
Earthenware.....	50	8	2	40
Effects, Settlers'.....	1,590	787	19	784
Eggs.....	896	893		3
Egg Fillers.....	53	53		
Electrical Apparatus.....	1,030	858	98	74
Enamelware.....	17	10		7
Engines, Oil.....	517	510	2	5
Extracts.....	32	3	23	6
Feathers.....	8	8		
Feldspar.....	15	15		
Felt.....	314	268		46
Fertilizer, N.O.S.....	22			22
Fibreboard.....	1,747	1,745		2
Fish, Cured.....	2,147	422		1,725
“ Fresh or Frozen.....	1,183	1,133	5	45
“ in tins.....	418	409		9
“ Meal.....	83	83		
Floorings, Hardwood.....	1,556	1,482		74
Flour.....	228,378	113,044	16,825	98,509

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Flour, Wood.....	32	32	...	...
Fruit, Dried.....	49	4	...	45
“ in tins.....	1,656	332	1,295	29
“ Juices.....	6	4	...	2
“ Pectin.....	898	898	..	...
“ Pulp.....	6	...	...	6
“ Raw.....	46,375	44,915	1,219	241
“ Syrups.....	8	...	8	...
Furniture.....	2,008	1,487	3	518
Furs.....	300	71	...	229
Fur Waste.....	8	2	...	6
Garden Bulbs.....	1,120	1,119	...	1
Gasoline.....	97	4	...	93
Glassware.....	52	30	...	22
Glutrin.....	23	23	...	...
Grain in Bags:—				
Barley.....	63	62	...	1
Buckwheat.....	272	...	...	272
Corn.....	507	11	...	496
Oats.....	4,758	1,762	...	2,996
Wheat.....	6,194	7	...	6,187
Grain in Bulk:—				
Barley.....	421,512	...	421,512	...
Buckwheat.....	2,257	...	2,257	...
Oats.....	126,481	...	126,481	...
Rye.....	64,441	...	64,441	...
Wheat.....	1,542,480	...	1,542,480	...
Graphite.....	53	53	...	...
Grease.....	1,616	1,287	...	329
Grinding Wheels.....	17	12	5	...
Groceries, N.O.S.....	35	5	7	23
Gum, Chewing.....	152	138	14	...
Gypsum Plaster.....	1,082	1,020	...	62
Hair.....	454	453	...	1
Handles, Wooden.....	717	697	8	12
Hardware.....	710	363	43	304
Hay.....	17,577	2,501	7,385	7,691
Hides.....	312	88	191	33
Honey.....	974	192	393	389
Hops.....	344	338	...	6

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Horses....	53	...	...	53
Horse Shoes.....	38	...	...	38
Incubators.....	89	89	...	...
Inks.....	90	3	35	52
Instruments, Musical.....	111	80	2	29
Insulators.....	457	87	370	...
Iron Bars.....	122	1	...	121
“ Mfrs. of.....	274	202	2	70
“ Pig.....	114	114	...	...
“ Piping.....	2,779	1,277	...	1,502
“ Scrap.....	79	38	2	39
“ Sheet.....	366	363	...	3
Lamps and Lanterns.....	60	44	9	7
Lard.....	54,236	54,086	1	149
Lawn Mowers.....	47	19	...	28
Lead, Mfrs. of.....	36	22	...	14
Leather.....	200	160	15	25
Leatherboard.....	4	...	...	4
Leather, Mfrs. of.....	901	846	25	30
“ Scrap.....	5	...	5	...
Linoleum.....	129	...	...	129
Liquor, Lignum.....	410	410	...	...
Liquors.....	17,494	16,273	910	311
Livestock, N.O.S.....	59	...	...	59
Lobsters, in tins.....	1,098	971	4	123
Macaroni.....	637	10	1	626
Machinery.....	1,602	1,373	74	155
Machines, Sewing and Parts....	25	4	...	21
Magnesia, Milk of.....	74	...	74	...
Magnesite.....	1,169	1,169	...	...
Malt.....	1,376	1,351	...	25
Malt Extract.....	7	7	...	...
Maple Strips.....	413	385	...	28
Match Splints.....	2,489	2,489	...	...
Matches.....	17	1	...	16
Meals, N.O.S.....	322	322	...	...
Meat, Cured.....	26,064	25,468	91	505
“ Fresh or Frozen.....	2,851	2,459	...	392
“ in tins.....	2,894	2,880	...	14

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Meters.....	20	5	14	1
Middlings.....	2,052	1,308	70	674
Milk, in tins.....	4,171	2,629	1,474	68
“ Powdered.....	1,819	1,773	8	38
Millinery.....	16	6	...	10
Mineral Waters.....	44	...	...	44
Motorboats.....	135	115	...	20
Motorcycles.....	16	4	...	12
Mustard.....	7	...	...	7
Nails.....	439	90	4	345
Naphtha.....	18	...	...	18
Nickel Ingots.....	247	247	...	...
“ Matte.....	5,353	5,353	...	...
“ N.O.S.....	35	35	...	...
“ Oxide.....	848	848	...	...
“ Shot.....	138	138	...	...
“ Silver.....	11	7	4	...
“ Slabs.....	125	125	...	...
Nuts and Bolts.....	100	4	...	96
Nuts, Edible.....	38	5	32	1
Oat Meal.....	5,978	5,563	154	261
Oats, Rolled.....	17,513	16,260	870	383
Oil Cake.....	9,022	539	280	8,203
“ Cod Liver.....	5	...	5	...
“ Cotton Seed.....	26	10	16	...
“ Fuel.....	8	...	...	8
“ Lard.....	59	59	...	...
“ Linseed.....	18	...	...	18
“ Lubricating.....	54	...	...	54
“ Oleo.....	503	374	129	...
“ Rape.....	5	...	...	5
“ Various, N.O.S.....	14	2	...	12
Paints.....	158	19	7	132
Paperboard.....	116	112	...	4
Paper, Mfrs of.....	460	334	24	102
“ Printing.....	55,955	55,710	...	245
“ Roofing.....	804	352	...	452
“ Wall.....	570	87	240	243
“ Wrapping.....	2,526	2,430	...	96

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Peas.....	209	205	...	4
Peas, Split.....	75	69	...	6
Phosphorus.....	2,777	2,107	397	273
Photo Supplies.....	1,081	522	553	6
Piassaya.....	21	21	...	...
Pickles.....	145	89	46	10
Pictures and Frames.....	58	26	...	32
Pipe Fittings.....	112	54	...	58
Pitch.....	17	12	...	5
Plasterboard.....	2,193	2,123	...	70
Polishes.....	29	1	1	27
Pollard.....	14	7	...	7
Potash, N.O.S.....	8	...	...	8
" Nitrate of.....	18	...	...	18
Poultry.....	43	35	...	8
Preserves.....	24	19	5	...
Printed Matter, N.O.S.....	84	45	8	31
Propellers.....	8	8	...	...
Pulleys.....	34	31	...	3
Pulpboard.....	860	860	...	...
Pumps.....	58	58	...	...
Putty.....	10	..	...	10
Radiators.....	43	5	1	37
Radio Parts.....	214	208	...	6
Rags.....	723	23	213	487
Razors and Parts.....	6	...	3	3
Refrigerators.....	1,067	936	11	120
Releaseall.....	9	...	...	9
Resin.....	3	3	...	...
Rice.....	61	...	...	61
Rice Meal.....	1,794	...	...	1,794
Roofing Felt.....	198	198	...	...
Rubber, Mfrs. of.....	12,448	6,429	2,481	3,538
" Scrap.....	97	76	...	21
Safes.....	5	...	5	...
Salt, Fine.....	1,048	1,030	1	17
Salts, Health.....	8	2	4	2
Sauces.....	95	3	87	5
Sausages.....	18	18	...	...
Sawdust.....	32	...	...	32

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Scales.....	49	42	...	7
Screenings.....	94	84	...	10
Seeds.....	1,312	606	704	2
Seneca Root.....	67	66	1	...
Shawinigan Black.....	863	863	...	...
Ship Stores.....	4,845	...	...	4,845
Shoe Counters.....	29	...	...	29
Shoe Shanks.....	4	...	...	4
Shooks.....	1,828	1,712	49	67
Shorts.....	1,228	271	224	733
Shovels.....	105	105	...	...
Silicate of Soda.....	42	...	...	42
Silverware.....	7	1	...	6
Skewers.....	10	10	...	...
Soap.....	2,287	55	2,231	1
" Powders.....	62	41	9	12
Soapstone.....	249	249	...	...
Solder.....	4	...	...	4
Soups, in tins.....	2,778	653	2,055	70
Spelter.....	9,829	9,829	...	...
Spices.....	6	...	...	6
Sponges.....	5	5	...	...
Sporting Goods.....	170	34	113	23
Staples, Metal.....	42	31	...	11
Starch.....	21	15	...	6
Stationery.....	208	88	35	85
Statuary.....	19	...	...	19
Stearine.....	33	31	2	...
Stellite.....	4	4	...	...
Steel, Mfrs. of.....	97	79	...	18
" Plates.....	7	...	2	5
" Sheets.....	441	150	281	10
" Structural.....	66	54	...	12
Stoves.....	2,020	1,812	18	190
Strawboard.....	6	...	...	6
Sugar, Maple.....	24	24	...	...
" Refined.....	657	...	...	657
Sundries.....	2,225	198	1,452	575
Sweeping Compound.....	15	...	...	15
Syrup, Corn.....	1,021	1,021	...	...
" N.O.S.....	56	49	1	6

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Table Oilcloth.....	13	...	...	13
Talc.....	748	743	5	...
Tallow.....	539	13	...	526
Tanners' Extract.....	5	...	...	5
Tanks.....	15	...	...	15
Tarvia.....	39	...	...	39
Tea.....	63	3	...	60
Thread.....	7	...	...	7
Tiles.....	21	21	...	...
Tins, empty.....	72	...	...	72
" Scrap.....	93	89	...	4
Tinware.....	12	6	1	5
Tobacco, Raw Leaf.....	1,012	917	...	95
" Mfrs. of.....	32	4	...	28
Tobacconists' Sundries.....	32	6	25	...
Toilet Preparations.....	87	25	43	19
Tomato Juice.....	216	35	181	...
" Pulp.....	1,692	25	1,656	11
Tools.....	469	409	8	52
Toys.....	131	73	41	17
Tractors.....	263	263	...	...
Trucks.....	305	236	...	59
Trunks.....	50	4	...	46
Twine, Binder.....	3,317	565	2,749	3
Type.....	14	8	...	6
Typewriters.....	26	...	1	25
Vacuum Cleaners.....	1,631	3	1,626	2
Valises.....	6	6	...	...
Valves.....	542	47	299	196
Varnish.....	25	2	10	13
Vegetable Pulp.....	71	25	46	...
Vegetables, Raw.....	380	216	...	164
" in tins.....	2,122	291	723	1,108
Vencers.....	1,149	1,119	...	30
Vinegar.....	29	...	...	29
Wagons.....	13	...	12	1
Wallboard.....	4,845	4,808	2	35
Washing Machines.....	1,740	1,571	129	40
Wheels and Parts.....	191	81	100	10
White Lead.....	122	...	...	122

Carried Before Export

COMMODITY	Total Tons	Rail	Vessel	Other
Window Frames.....	214	214	...	...
Wines.....	38	2	1	35
Wire, in barrels.....	170	12	...	158
" Barbed.....	87	9	...	78
" Cloth.....	113	55	41	17
" Fencing.....	185	75	37	73
" Mfrs. of.....	110	58	1	51
" Netting.....	23	18	1	4
" Rope.....	4	...	...	4
" Steel in Coils.....	296	71	6	219
Woodenware.....	1,173	1,058	13	102
Woodpulp.....	23,566	23,559	...	7
Wool.....	1,492	1,423	67	2
Yeast.....	65	15	50	...
Zinc Dross.....	195	...	...	195
" Ingots.....	479	479	...	...
" Scrap.....	45	45	...	...
" Skimmings.....	309	103	...	206
" Slabs.....	202	202	...	...
	3,011,587	562,415	2,218,511	230,661
Lumber Exported.....	25,248			
	3,036,835			

DOMESTIC

	Total Tons	RAIL		VESSEL		Other
		In	Out	In	Out	
Acids, N.O.S.....	417	413	...	...	4	...
Aeroplanes and Parts.	19	16	3	...	...	...
Agricultural Implements.....	36	...	...	3	33	...
Alcohol, Industrial...	714	31	643	...	40	...
Aluminum, Mfrs.....	36	...	...	...	36	...
Ammunition.....	65	...	...	...	65	...

	Total Tons	RAIL		VESSEL		
		In	Out	In	Out	Other
Ammonia.....	157	...	...	22	135	...
" Carbonate						
of.....	3	...	...	...	3	...
" Nitrate of.	19	...	...	...	19	...
Asbestos.....	296	141	11	...	144	...
" Mfrs of.....	22	18	...	...	4	...
Asphalt.....	351	...	351	...	...	...
Automobiles.....	5	...	...	4	1	...
Axles.....	374	330	18	...	26	...
Babbit.....	13	...	...	...	13	...
Bagging.....	1,363	55	1,280	...	28	...
Baking Powder.....	8	...	...	...	8	...
Barrels, Empty.....	89	85	...	4	...	...
Basketware.....	121	121	...	...	...	...
Baths.....	25	24	...	...	1	...
Beans.....	158	155	...	1	2	...
Bedding.....	7	...	...	...	7	...
Beer.....	529	...	...	...	529	...
Belting.....	13	...	...	...	13	...
Bicarbonate of Soda..	187	...	173	...	14	...
Bicycles and Parts...	128	119	...	...	9	...
Biscuits.....	3	...	...	...	3	...
Boats.....	13	13	...	...	...	...
Boilers and Parts....	825	112	592	...	121	...
Bolts and Nuts.....	229	...	...	1	228	...
Books.....	66	...	...	...	66	...
Boots and Shoes.....	73	...	...	41	32	...
Bottles, Empty.....	337	95	...	61	181	...
Bottles, Thermos....	6	...	...	...	6	...
Bottle, Capsules.....	99	...	...	...	99	...
Boxes, Empty.....	184	105	44	31	4	...
Brake Shoes.....	18	...	...	...	18	...
Bran.....	4,588	1,600	...	2,984	4	...
Brass, Mfrs of.....	17	10	...	...	7	...
Brick, Fire.....	290	158	132	...	...	...
" Terra Cotta...	1,056	...	...	927	129	...
Bronze, Mfrs. of.....	6	...	...	...	6	...
" Powder.....	15	...	...	...	15	...
Brushes.....	3	...	...	2	1	...
Butter.....	82	82	...	...	...	...
Candles.....	6	...	...	...	6	...
Canned Goods, N.O.S.	379	13	...	26	340	...

	Total	RAIL		VESSEL		
	Tons	In	Out	In	Out	Other
Carbide.....	449	32	...	...	417	...
Cardboard.....	203	...	...	...	203	...
Castings.....	44	...	14	1	29	...
Cement.....	120,846	462	24,888	1,866	89,419	4,211
Cereals.....	150	150	...	...	...	...
Chains.....	80	...	...	...	80	...
Cheese.....	2,161	1,412	749	...	...	...
Chemicals, N.O.S....	115	79	...	...	36	...
Chicory.....	8	...	...	...	8	...
Chinaware.....	23	22	...	...	1	...
Cigars and Cigarettes	121	...	...	...	121	...
Cinders.....	25	25	...	...	...	...
Clay, Fire.....	197	168	...	...	29	...
Cleanders.....	553	270	...	2	281	...
Clothes Pins.....	24	...	...	...	24	...
Coal, Anthracite....	24,715	24,715	...	...	...	...
" Bituminous....	1,380,219	1,349	...	1,377,745	364	761
Cocoa.....	61	...	...	...	61	...
Coke.....	2,116	2,092	...	...	...	24
Confectionery.....	41	20	...	3	18	...
Corks.....	14	...	...	...	14	...
Corn Flour.....	28	28	...	...	...	...
Corn Starch.....	120	...	...	...	120	...
Copper, Mfrs of....	5	...	...	...	5	...
Cotton Seed Hulls...	40	40	...	...	...	...
Cotton Waste.....	22	22	...	...	...	...
Cream Separators....	102	102	...	...	...	...
Crockery.....	10	...	...	2	8	...
Disinfectants.....	55	...	...	...	55	...
Doors.....	46	46	...	...	...	...
Drugs.....	108	29	...	3	76	...
Druggists' Sundries..	68	...	...	...	68	...
Dry Goods.....	180	...	...	1	179	...
Dyes.....	2	...	...	...	2	...
Earthenware.....	65	...	...	...	65	...
Eggs.....	733	719	13	...	1	...
" Frozen.....	75	75	...	...	...	...
Electrical Apparatus.	106	32	...	5	69	...
Enamelware.....	73	72	...	...	1	...
Extracts.....	63	...	...	...	63	...

	Total Tons	RAIL		VESSEL		
		In	Out	In	Out	Other
Feed.....	396	288	...	29	79	...
Felt.....	32	...	...	...	32	...
Fertilizers, N.O.S....	201	43	158	...	...	...
Firearms.....	5	...	...	4	1	...
Fire Extinguishers...	4	...	...	...	4	...
Fish, Cured.....	83	...	...	83	...	...
" Fresh.....	28	16	12	...	...	...
" in tins.....	3,623	87	31	3,405	100	...
Flax.....	3,886	3,886	...	...	...	...
Flooring, Hardwood..	5	...	...	...	5	...
Flour, N.O.S.....	28,162	5,327	273	21,373	1,189	...
Forgings.....	40	6	...	...	34	...
Fruit, Dried.....	202	63	...	...	139	...
" Green.....	3,194	2,797	396	...	1	...
" Juice.....	2	...	...	...	2	...
" Syrup.....	8	...	...	...	8	...
" in tins.....	1,243	...	...	1,133	110	...
Furniture.....	327	67	...	6	254	...
Galvanized Sheets...	2,309	838	1,453	...	18	...
Gasoline.....	243,643	250	65,186	2,845	175,362	...
Gear.....	630	212	418	...	...	...
Gelatine.....	12	...	...	...	12	...
Ginger.....	2	...	...	2	...	...
Glass, Pulverized....	29	29	...	...	...	...
Glassware.....	31	18	...	3	10	...
Glucose.....	459	...	...	...	459	...
Glue.....	73	...	...	...	73	...
Grain in Bags.....	1,747	856	171	697	23	...
" For Local Delivery....	262,517	4,747	...	257,770	...	...
Grease.....	34	...	...	...	34	...
Grindstones.....	2	...	...	...	2	...
Groceries, N.O.S....	770	575	2	4	189	...
Gypsum.....	58,370	...	...	58,367	3	...
Handles, Wooden....	610	344	...	244	22	...
Hardware.....	767	507	...	8	252	...
Hay.....	995	...	...	...	...	995
Honey.....	196	12	...	...	184	...
Hops.....	51	...	...	7	44	...
Horse Shoes.....	88	...	...	...	88	...

	Total Tons	RAIL		VESSEL		Other
		In	Out	In	Out	
Ink.....	64	...	...	...	64	...
Insect Powder.....	15	15	...	...	...	...
Instruments, Musical.....	10	...	...	...	10	...
Iron Bars.....	182	...	73	...	109	...
Iron Pipe.....	2,757	49	14	26	2,668	...
Iron Plates.....	3	...	...	1	2	...
Kalsomine.....	355	...	...	...	355	...
Lamps and Lanterns.....	8	...	...	2	6	...
Lard.....	881	833	16	...	32	...
Lead.....	29	...	...	...	29	...
Leather.....	17	...	...	...	17	...
Lime.....	360	328	...	...	32	...
Lime Juice.....	13	...	...	...	13	...
Liquors, Intoxicating.....	110	...	105	...	5	...
Lye.....	58	58	...	...	...	...
Macaroni.....	13	...	...	...	13	...
Machinery.....	1,574	734	774	5	61	...
Magnesia.....	16	...	...	...	16	...
Malt.....	36	...	...	...	36	...
Marble Slabs.....	23	23	...	...	...	...
Matches.....	22	...	...	...	22	...
Meal, N.O.S.....	1,778	154	1,609	15	...	...
Meat, Cured.....	47	15	...	...	32	...
“ Extracts.....	65	...	...	...	65	...
“ Fresh.....	1,290	1,290	...	...	...	...
“ in tins.....	192	16	...	3	173	...
Middlings.....	3,685	639	...	2,988	58	...
Milk, in tins.....	346	257	...	...	89	...
“ Powdered.....	254	241	...	...	13	...
Mirrors.....	3	...	...	...	3	...
Molasses.....	12,112	77	12,035	...	...	...
Moulee.....	60	...	...	24	36	...
Mustard.....	12	...	...	1	11	...
Nails.....	1,526	44	37	...	1,444	1
Nuts, Edible.....	2	...	...	...	2	...
Oakum.....	15	15	...	...	...	...
Oat Hulls.....	25	...	25	...	...	...
Oats, Feed.....	79	79	...	...	...	...

	Total Tons	RAIL		VESSEL		Other
		In	Out	In	Out	
Oats Rolled.....	2,278	356	...	1,907	15	...
Oil Cake.....	200	...	200	...	...	...
“ Bunker.....	28,310	...	...	...	28,310	...
“ Coal.....	182	...	182	...	...	...
“ Cod Liver.....	36	...	...	...	36	...
“ Corn.....	111	...	...	...	111	...
“ Crude.....	251,816	128	18	...	251,670	...
“ Fuel.....	275,396	2,628	4,607	39,213	228,948	...
“ Gas.....	161	...	161	...	...	...
“ Linseed.....	751	15	721	...	15	...
“ Lubricating.....	45,626	212	17	...	45,397	...
“ Olive.....	6	...	...	...	6	...
“ Refined.....	12,003	87	...	11,912	4	...
“ Tar.....	260	...	171	...	89	...
“ Whale.....	51	...	...	51	...	...
“ Various, N.O.S....	35	...	...	32	3	...
Paints.....	755	...	66	3	686	...
Palm Leaves.....	28	28	...	...	...	...
Paper, Mfrs of.....	929	555	9	8	357	...
“ Printing.....	7,724	...	...	7,702	22	...
“ Roofing.....	600	27	...	...	573	...
“ Stock.....	1,058	...	1,058	...	...	...
“ Toilet.....	98	...	...	92	6	...
“ Wall.....	177	...	...	...	177	...
“ Wrapping.....	345	236	...	...	109	...
Peas.....	10	...	...	...	10	...
Peanut Butter.....	10	...	...	...	10	...
Peels.....	7	...	...	1	6	...
Phosphate.....	95	75	20	...	...	...
Pickles.....	88	62	...	...	26	...
Pictures and Frames..	11	...	...	...	11	...
Pipe Fittings.....	164	...	...	8	156	...
“ Galvanized.....	1,511	...	...	...	1,511	...
Plaster.....	621	621	...	...	...	...
Polishes.....	111	...	...	7	104	...
Porcelain.....	15	...	...	...	15	...
Poultry.....	196	195	...	...	1	...
Poultry Feed, N.O.S..	99	52	...	35	12	...
Preserves.....	317	271	29	...	17	...
Printed Matter.....	28	...	...	1	27	...
Pulley Blocks.....	7	...	...	...	7	...

	Total	RAIL		VESSEL		
	Tons	In	Out	In	Out	Other
Pulpboard.....	215	...	...	...	215	...
Pulpwood.....	458	...	27	55	376	...
Radios.....	8	8	...	...	...	...
Rags.....	2,181	73	2,095	...	13	...
Reels, Wooden.....	5	...	...	5	...	...
Refining Earth.....	437	437	...	...	...	...
Refrigerators.....	44	20	24	...	...	...
Rice.....	386	...	...	307	79	...
Rivets.....	36	...	...	...	36	...
Rope.....	5	...	...	...	5	...
Rubber, Mfrs of.....	55	6	...	...	49	...
Salt, Coarse.....	370	369	...	...	1	...
" Fine.....	2,089	2,084	...	...	5	...
" Health.....	74	...	...	2	72	...
Sand.....	62,754	438	...	38,937	...	23,379
Sauces.....	72	61	...	...	11	...
Sawdust.....	72	72	...	...	...	...
Scales.....	37	...	30	...	7	...
Scrap Brass.....	1,203	49	995	2	...	157
" Felt.....	8	8	...	...	...	...
" Iron.....	1,277	27	1,250	...	...	...
" Leather.....	65	5	60	...	...	...
" Rope.....	17	...	17	...	...	...
" Steel.....	5,712	2,384	3,328	...	...	...
" Tin.....	53	...	...	30	23	...
" N.O.S.....	18	...	15	3	...	...
Seed, Bird.....	13	...	...	...	13	...
Seed, N.O.S.....	74	40	...	...	34	...
Sewing Machines....	35	...	...	...	35	...
Shingles.....	294	...	...	...	294	...
Ship Stores.....	382	...	310	9	63	...
Shoe Findings.....	4	...	...	...	4	...
Shooks.....	491	491	...	...	...	...
Shortening.....	196	...	...	...	196	...
Shorts.....	7,517	2,095	...	5,362	60	...
Slag.....	180	30	150	...	...	...
Soda Ash.....	21	21	...	...	...	...
" Caustic.....	25	...	...	...	25	...
" Sal.....	124	41	...	...	83	...
Soap, Castile.....	14	14	...	...	...	...
" Common.....	571	424	...	...	147	...

	Total	RAIL		VESSEL		
	Tons	In	Out	In	Out	Other
Soap, Powders.....	148	140	...	...	8	...
“ Toilet.....	621	594	...	...	27	...
Soups, in tins.....	440	13	...	...	427	...
Spices.....	8	...	...	...	8	...
Spikes.....	414	...	234	1	179	...
Spoolwood.....	1,554	1,554	...	...	...	...
Staples, Metal.....	104	...	...	...	104	...
Starch.....	331	86	...	...	245	...
Stationery.....	735	...	7	...	728	...
Steel Angles.....	128	57	68	...	3	...
“ Bars.....	9,202	1,212	7,759	3	23	205
“ Beams.....	466	452	...	...	14	...
“ Billets and Blooms.....	20,377	20,377	...	...	...	...
“ Channels.....	69	69	...	...	...	...
“ Cylinders.....	1,962	...	15	...	39	1,908
“ Drums.....	181	117	59	5	...	...
“ Hoops.....	5	...	...	...	5	...
“ Pipe.....	1,168	40	...	4	1,124	...
“ Plate.....	2,180	1,883	276	...	21	...
“ Rails.....	10,210	2,480	...	7,404	326	...
“ Rods.....	2,137	236	937	...	9	955
“ Sheets.....	78	78	...	...	...	...
“ Structural.....	5,379	21	3,331	...	1,502	525
“ Tanks.....	289	3	286	...	...	...
“ Mfrs of N.O.S.....	8	...	...	...	8	...
Stone, Crushed.....	71,081	249	23	...	18,263	52,546
“ Cut.....	31	31	...	...	...	...
“ Rubble.....	16,963	...	...	...	...	16,963
Stoneware.....	74	74	...	...	...	...
Stoves.....	158	88	...	1	69	...
Strawboard.....	34	...	...	...	34	...
Sugar, Raw.....	68	68	...	...	...	...
“ Refined.....	69,268	1,540	9,334	25,189	33,205	...
Sundries.....	1,087	919	...	35	133	...
Syrup, Corn.....	119	16	...	...	103	...
“ Malt.....	100	...	...	...	100	...
“ Maple.....	35	...	...	...	35	...
“ N.O.S.....	66	...	...	...	66	...
Tar.....	41	...	...	...	41	...
Tea.....	245	...	196	10	39	...
Tie Plates.....	336	...	...	336	...	...

	Total	RAIL		VESSEL		Other
	Tons	In	Out	In	Out	
Tin, Mfrs of.....	37	9	...	...	28	...
Tobacco.....	584	43	68	...	473	...
Tomato Juice.....	7	...	...	...	7	...
Tooth Picks.....	11	...	...	...	11	...
Toys.....	15	...	...	1	14	...
Trucks.....	287	272	13	...	2	...
Twines.....	83	45	...	...	38	...
Valves.....	119	...	...	4	115	...
Varnish.....	46	...	...	1	45	...
Vinegar.....	126	37	2	...	87	...
Vegetables, Raw.....	17,685	16,739	713	133	100	...
" in tins...	756	71	...	102	583	...
Wallboard.....	79	...	54	...	25	...
Washers.....	42	...	...	...	42	...
Washing Blue.....	13	...	...	...	13	...
" Compounds.....	112	...	...	...	112	...
" Machines...	29	29	...	...	...	...
Wax.....	74	...	...	...	74	...
Wheel Barrows.....	30	28	...	...	2	...
Wheels.....	86	...	...	...	86	...
Window Shades.....	38	...	...	1	37	...
Wire Cloth.....	8	...	...	...	8	...
" Fencing.....	13	...	...	2	11	...
" Galvanized.....	302	...	...	29	273	...
" Hangers.....	29	...	...	...	29	...
" Netting.....	79	...	...	...	79	...
" N.O.S.....	388	...	...	42	344	2
" Rods.....	424	424	...	...	...	...
" Rope.....	187	...	...	19	168	...
Wringers.....	26	...	...	...	26	...
Wood, Mfrs of.....	138	106	...	8	24	...
Yeast.....	13	13	...	...	...	...
Zinc.....	727	726	...	...	1	...

Totals..... 3,150,640 127,176 150,634 1,871,794 898,404 102,632

MISCELLANEOUS

	Total	RAIL		VESSEL		Other
		In	Out	In	Out	
Brick						
(Number)	352,243	226,230	63,063	...	62,950	.....
Firewood						
(Cords)...	700	305	.....	395	.....	.....
Grain Doors						
(Cars)....	92	6	86	.....	.....	.....
Lumber						
(Feet)....	4,062,409	652,386	18,000	3,377,859	10,164	4,000
Lumber						
Rough						
(Feet)....	52,666,257	18,626,240	54,000	21,058,510	68,137	12,859,370
Ogilvie F.M.						
(Cars)....	2,727	784	1,943	...	.....	.....
St. John						
Freight						
(Cars)....	471	471	.....	.....	.....	.....
Railway						
Ties						
(Number).	19,643	19,643	.....	.....	.....	.....

Estimated Tonnage of Above

COMMODITY	TONS
Brick.....	881
Firewood.....	700
Grain Doors.....	1,104
Lumber, Dressed.....	4,062
Lumber, Rough.....	52,666
Ogilvie Cars.....	109,080
St. John Freight.....	14,130
Ties.....	982
Total Miscellaneous.....	183,605
Less Lumber Exported.....	25,248
Net Miscellaneous.....	158,357
Total Domestic.....	3,150,640
Net Miscellaneous.....	158,357
Grand Total.....	3,308,997

TONNAGE SUMMARY

	RAIL	VESSEL	OTHER	TOTAL
Domestic.....	277,810	2,770,198	102,632	3,150,640
" Brick, etc.....	145,676	25,066	12,863	183,605
Domestic Total.....	423,486	2,795,264	115,495	3,334,245
Less Lumber Exported.....				25,248
				3,308,997

Distribution after Import

	RAIL	VESSEL	OTHER	TOTAL
Import.....	126,649	260,516	3,181,377	3,568,542

Carried before Export

	RAIL	VESSEL	OTHER	TOTAL
Export.....	562,415	2,218,511	230,661	3,011,587
Lumber Exported.....				25,248
				3,036,835

Distribution of Tonnage

	RAIL	VESSEL	OTHER
Domestic.....	423,486	2,795,264	115,495
Import.....	126,649	260,516	3,181,377
Export.....	562,415	2,218,511	230,661
	1,112,550	5,274,291	3,527,533

Total Tonnage All Sources

Import.....	3,568,542 tons
Export.....	3,036,835 "
Domestic.....	3,308,997 "
Grand Total.....	9,914,374 tons

Note.—Of the total of 56,728 tons of lumber shown in the Miscellaneous statement, there was exported 25,248 tons, which is shown as an addition to the Export Tonnage.

STATEMENT OF COAL IMPORTS

Foreign Coal Imported Ex Vessel

British Anthracite.....	688,833 tons
German Anthracite.....	54,642 "
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Total Anthracite.....	743,475 tons
American Bituminous.....	81,398 tons
British Bituminous.....	36,668 "
<hr/>	
Total Bituminous.....	118,066 tons
Anthracite.....	743,475 tons
Bituminous.....	118,066 "
<hr/>	
Total Ex Vessel.....	861,541 tons

Other Coal Imports

Canadian Bituminous (ex Vessel from Nova Scotia).....	1,377,745 tons
British Anthracite (ex Rail from Portland in Winter Season).....	3,179 "
American Bituminous (ex Rail).....	1,349 "
American Anthracite (ex Rail).....	9,349 "
<hr/>	
	1,391,622 tons
Total Canadian.....	1,377,745 tons
Total Foreign (ex Vessel).....	861,541 "
Total Foreign (ex Rail).....	13,877 "
<hr/>	
Grand Total.....	2,253,163 tons
Total Bituminous.....	1,497,160 tons
Total Anthracite.....	756,003 "
<hr/>	
	2,253,163 tons

ENGINEERING DEPARTMENT

The capital expenditures during the past season were restricted to those items already in progress or directly related to the works recently completed.

Wharves

Completion of the downstream side of King Edward Pier.

Continuation of Shore Wharves, Sections 34-35.

Continuation of the upstream side of Laurier Pier Reconstruction, Section 42.

Completion of the first stage of wharf construction at Section 58.

Buildings

Completion of Shed No. 9 Extension on King Edward Pier and the Grain Conveyer Gallery over the shed.

Water Mains, Sewers, Intake Pipes

Extension of sewer outlet at Section 58.

Drain pipes at Shed No. 9, King Edward Pier.

Two drain outlets at Section 35.

Water intake well at Section 35.

Several odd intake wells constructed or altered.

Water main line at Sections 8, 9 and 10.

Railway Construction

Extension of railway system along the cope of the wharf at Sections 33-34.

Extension of track along extension of Shed No. 9, King Edward Pier.

New timber subway under main line at Section 45.

Dredging

Preparation of crib seats in connection with wharf construction work and cleaning fairway at these new wharves.

Backfilling of these wharves.

Dredging of berth on the inshore side of McColl-Frontenac Oil Wharf Extension at Sections 99-100.

Continuation of backfilling behind Montreal East Wharf, Section 109.

Deepening of berth at the Canada Cement Wharf, Sections 96-97.

Accommodation work for the Canadian Copper Refinery at Section 104, and for the Department of Railways and Canals at Section 11.

Maintenance dredging.

Sundries

Installation of two Travelling Grain Loaders.

NEW WHARVES

Continuation of Reconstruction of Downstream Side of King Edward Pier

The work of reconstructing the downstream side of King Edward Pier, which had been commenced in November, 1930, was completed for the opening of navigation 1931.

The method of construction fully described in last year's report was thoroughly adhered to and the work completed as originally planned.

The total cope line measurement of this reconstructed portion of the pier is approximately 1,485 lin. ft., including the return or outer end of the pier.

Continuation of Shore Wharf, Sections 34-35

At Sections 34 and 35, in order to complete the last saw-tooth down to the existing Dominion Coal Co.'s Coal Tower

Wharf at Section 36, three concrete cribs 107 ft. long, 42 ft. wide, and three 112 ft. long, 42 ft. wide, all founded at an average depth of 37.13 ft. below low water Elevation 93 H.D., were sunk, filled and the mass concrete superstructure wall built over them to cope Elevation 119.25. The reclamation work between the existing rotted wooden crib and the new cope line is presently in progress. The total length of this sawtooth wharf is 902 ft., of which 670 ft. 6 in. is covered by the six cribs placed in 1931.

Continuation of Reconstruction of Laurier Pier, Section 42

At the upstream side of Laurier Pier, so as to permit at an early date of reclaiming the gap between the old and the new work and to protect the whole structure against the action of ice shoves, a first concrete crib 107 ft. long, 42 ft. wide, founded at approximately 43 ft. below low water elevation, was placed. One corner crib 113 ft. 4 in. long on the face, 127 ft. 8 in. on the back and 42 ft. wide was afterward founded at a depth of approximately 43 ft. below low water level. A crib 92 ft. 6 in. long, 42 ft. wide was founded on the return end of the pier at 36 ft. 3 in. below low water elevation. These three cribs were filled and part of the reclamation work back of them was carried out. The total length of reconstructed cope amounts, to date, to 1,036 ft., of which 366 ft. was carried out during 1931.

Continuation of Shore Wharf, Section 58

At Section 58 one crib 112 ft. long, 42 ft. wide was founded at 37 ft. 11 in. approximately below the low water elevation and filled. This crib extends the recently constructed Coal Dock below the Canadian Vickers' Dry Dock by 114 ft. 6 in. This work was carried out, partly to enable the Commissioners to extend a City sewer outlet to the new wharf line, thus permitting the reclamation work to be carried out behind the crib and over the pipe and partly because the Commissioners were pressed for additional Coal Storage area by the lessees of the dock. The superstructure wall is not to be erected for the present.

RECAPITULATION OF WHARF CONSTRUCTION

Concrete Cribbs sunk to Low Water Level:

	No.	Length on Cope Line Lin. ft.	Total Lin. ft.
Laurier Pier.....	3	366'6"	
Shore Wharf, Sections 57-58..	1	114'6"	481'0"

Concrete Cribbs sunk to Low Water Level and Completed to Elevation 119.25

Sections 34-35.....	6	712'6"	712'6"
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EXTENT OF WHARVES

The extent of the Wharves and Piers at the end of the season of 1931 is as follows:—

30 ft. depth and over, at

O.L.W.....	36,308 lin. ft. or	6.8765 miles
25 ft. to 30 ft. depth.....	15,203 "	2.8793 "
Total deep draught..	51,511 "	9.7558 "
20 ft. depth and under.....	1,824 "	0.3454 "
Total Wharfage end of 1931..	53,335 "	10.1012 "
Total Wharfage end of 1930..	52,618 "	9.9654 "
Increase in 1931.....	717 "	0.1358 "

BUILDINGS

Extension to Shed No. 9

In order to provide shed accommodation to meet the requirements of the lessees of Shed No. 9 on the upstream side of King Edward Pier, the Commissioners decided to extend this shed for a length of 243 lin. ft.

The dimensions of the completed extension are:

Length.....	243 ft.
Width.....	91 ft.

The shed is of the standard two-deck type equipped with a two-belt grain conveyor gallery and travelling ship loader.

The shed is of fireproof construction throughout, consisting of a structural steel frame resting upon reinforced concrete pile foundations. The floors and roof are of reinforced concrete and the sides are sheeted with galvanized corrugated iron. All windows are solid metal sash, glazed with wire glass. The doors are of the two-section turnover type, all-metal, which is standard throughout the Harbour.

The piling was finished early in January. The construction of the footings, curtain walls and shed superstructure was completed and the shed ready for occupancy at the opening of navigation 1931.

Removal of Temporary Extension to Shed No. 10

The temporary extension to Shed No. 10 was removed during the season and the entire steel structure was used as the second storey of the new extension to Shed No. 9.

The temporary timber foundations were removed to permit the completion of the anchorage system, necessitated by the reconstruction of the upstream and downstream sides of King Edward Pier.

SEWERS, INTAKE PIPES AND WATER MAINS

Lot No. 14 Sewer

The sinking of a new concrete crib at the north or downstream end of the Coal Docks at Sections 56-58 permitted the completion of the extension of the City Sewer known as Lot No. 14.

Some 22 lengths of 4 ft. 6 in. circular steel pipe, 8 ft. long, including one specially shaped or closing piece, also 8 ft. long approximately, were used for this extension during 1931.

Six of these pipes were embodied or placed at the required location and the proper elevation in the concrete crib during the course of its construction. After the crib was sunk in place, the connection between these and the existing outlet

inshore was made by connecting together under water the remaining 16 other lengths.

In addition to these, 6 other standard lengths of the 4 ft. 6 in. circular pipe 8 ft. long were placed into position last year, thus making a total extension to the original sewer of approximately 224 lin. ft. during the seasons 1930 and 1931.

9 in. Tile Pipe, Shed No. 9

A new 9 in. tile pipe, 223 lin. ft. in length, was laid along the new extension of Shed No. 9 and connected to the main sewer on King Edward Pier. This new sewer is to take care of all drainage and sewerage resulting from the construction of this extension. In addition two manholes were built and connected to this new system.

C.P.R. Sewer Outlet, Section 35

The Canadian Pacific Ry. Co. have a surface drain through the railway embankment which empties into the river at Section 35.

Due to the construction of the new sawtooth wharf, provisions were made to take care of this drain and an 18 in. tile pipe was laid through the concrete quay wall at a suitable elevation. This pipe will be connected to the present outlet inshore when the reclamation or back-fill between the new concrete and the old wooden wharf is sufficiently advanced to permit the completion of this drain.

Montreal Light, Heat and Power Sewer Outlet, Section 35

The Montreal Light, Heat & Power Co. have a sewer outlet at Section 35 and provisions were made to maintain this sewer by installing a 2' x 5' elliptical steel pipe approximately 45 ft. long at the proper elevation between two concrete cribs of the sawtooth wharf No. 5. It is expected that the extension between the new and the old outlet will be completed early next year.

Water Intake Well, Section 35

The Montreal Light, Heat & Power Co. have a water intake well at Section 35 for their Hochelaga Gas Works. Due to the construction of the new concrete sawtooth wharf No. 5, provisions had to be made to maintain this service.

A new intake well was built in one of the back crib pockets and connected to the river by means of a 24 in. pipe.

This well was extended from the top of the crib to cope elevation, thus forming a concrete screen chamber which will house the screen and other apparatus which will be used in connection with this new water intake.

Extension of Water Intake, Section 39

The water in the immediate vicinity of the intake sump or water well of the Commercial Alcohols Co. Ltd. could not be used by this firm on account of its pollution, resulting from its close proximity to the outlet of the Desery Street Sewer.

This company requested that the location of this intake well be changed and the size of the pipe line increased from 6 to 8 in. over the entire length of the new extension.

Consequently 280 lin. ft. of 8 in. pipe were laid in a southerly or upstream direction along the face of the old wooden wharf and across the gap between the old and the new concrete wharf and a new temporary sump was provided in the front face pocket of the permanent wharf.

Intake Well, Section 101

The Imperial Oil Co. decided to install water screens in their suction well situated in the front crib pockets of the wharf at Section 101.

For this purpose it was necessary to lay an additional floor in the new extension of this company's intake which was built last year and partly over the old section of the well.

This under-water portion of the work, as well as part of the installation of these water screens, was carried out by the Harbour Commissioners' forces during the course of the season.

Intake Well, Section 104

The Canadian Copper Refineries built an intake well at Section 104 to meet their present water requirements.

A portion of the work was carried out by the Commissioners' forces, viz.:—the driving of some 30 piles to support approximately 200 lin. ft. of 24 in. pipe which were also laid under water, including one elbow on the outer end. A small crib to protect this new water intake was also constructed.

Construction of 8 in. Water Main, Sections 8, 9 and 10

An extension to the water main on Windmill Point Wharf in the vicinity of Elevator "B," Sections 8, 9 and 10 Windmill Point, consisting of 8 in. main, with three hydrants and two valve chambers, was laid from Grain Gallery Tower "C" to Tower "B," a distance of approximately 900 lin. ft., and a 4 in. service branch 100 ft. long from said 8 in. main to Elevator "B."

Some 300 lin. ft. of this extension and the 4 in. service branch already existed, but was removed a few years ago when the wharf in this vicinity was reconstructed.

PAVING

The roadway through the new subway at Section 45 was paved with scoria blocks which were laid over a 6 in. reinforced concrete base.

No other lanes of traffic were paved during the year, but the following repairs were carried out along the wharf front during the season:

1,493 sq. yds. of paving were repaired along the tracks and roadways from Sections 12 to 18.

5,150 sq. yds. of paving were lifted and relaid on Jacques Cartier and Alexandra Piers.

735 sq. yds. of paving were lifted and relaid on King Edward Pier.

170 sq. yds. of paving were lifted and relaid on the Low Level Market Basin.

RAILWAY CONSTRUCTION

Sections 33-34

The extension of railway tracks along the face of the new sawtooth wharves Nos. 3 and 4 at Sections 33 and 34 amounted to approximately 1,134 lin. ft. and was carried out by the usual construction forces.

Tracks, King Edward Pier

An extension of 278 lin. ft. to each of the two shed tracks along the new extension of Shed No. 9 was built during the year.

The tracks along the temporary extension of Shed No. 10, which was removed during the season, were lifted, representing a decrease of approximately 550 lin. ft. of track.

In addition to the above items, the usual track maintenance from Sections 12 to 101, including the replacement of rails, turnouts, switches, cross ties, upkeep of roadbed, maintenance of way, snow removal, etc., etc., was carried out throughout the season by the railway section gangs.

The mileage of the Harbour Commissioners' railway was increased during the season by .215 mile.

SUNDRY ITEMS OF NEW WORK

There existed between the timber crib and the concrete superstructure at the northeast or downstream corner of Tarte Pier, a ledge or recess, thus causing the crib to project beyond the superstructure and forming a submerged hazard to navigation.

To remedy this condition, a steel plate approximately 20 ft. long and 15 ft. wide was fabricated and shaped to follow the profile of the corner of the crib and extending some 12 ft. above low water and fastened on to the concrete superstructure, thus indicating clearly to mariners the profile of the corner of the pier.

New Subway, Section 45

A new timber subway approximately 100 ft. long, 14 ft. wide, and 12 ft. clear head room was built across and through the railway embankment to connect the low level wharf at Section 45 with the loading yard and the storage warehouse of the St. Lawrence Sugar Refineries.

The side walls and the cribwork of this subway were all built with 12" x 12" square timber. Four 24" x 9", 73.5 lbs. I beams were placed under each of the three railway tracks to carry the decking, which consists of 8" x 10" bridge ties laid across the steel girders.

A concrete curb 16" high and approximately 12" wide was erected along the cope of the shore wharf in front of Elevator No. 2 to protect vehicular and pedestrian traffic along this roadway.

Travelling Grain Loaders

Two Travelling Grain Loading Machines were installed to serve Berths 8 and 10 in order to provide means for quick loading of grain to high ships, particularly during the period of high water. These machines, fabricated in the Commissioners' shops, and the steel supports are similar in all respects to those installed in 1930 on Berths 2, 3, 4, 5 and 6. Both were ready for operation at the opening of the navigation season 1931.

Conveyor System

Gallery No. 9 was extended 243 ft. and existing conveyor belts were lengthened and necessary machinery installed, providing more loading facilities to ships. These belts were ready for operation at the opening of the season.

DREDGING

Of the three Harbour Dredges and six Floating Derricks, only one dredge and three derricks were put in commission during the past season.

These units were engaged in the preparation of crib seats, in assisting in the sinking of these cribs and in filling and backfilling them.

They carried out the following works:—

At King Edward Pier, the obstructions at the new berths, created during the progress of the reconstruction of the downstream side of the pier, were removed.

They prepared the seats for the six cribs sunk at Sections 34-35 and filled the cribs following their sinking and placed a certain amount of backfill behind these units.

At Laurier Pier they also prepared the seats for and filled and backfilled the three cribs sunk at the outer end of the pier in process of reconstruction. Following the sinking of these cribs, considerable protection work was carried out against the action of the current, which is of considerable velocity at that special location, and also of the ice. The depth of the water where these cribs were placed attains 47 ft. at places.

The fleet units prepared the seat of the only crib sunk this year at Section 58 and filled and backfilled this unit.

The Canada Cement Wharf at Sections 96-97 was deepened to 28 ft. at low water elevation of 93 H.D.

The inshore side of the two crib extension to the McColl-Frontenac Wharf at Sections 99-100, carried out previously, was dredged so as to permit using this side of the wharf for the Old Company's shipping operations.

A trench was cut to a depth of 20 ft. for the installation of an intake pipe line for the benefit of the Canadian Copper Refinery at Section 104.

The gap between the mole and the shore at the British American Oil Wharf, Section 106, left unclosed the preceding season, was built up.

A certain amount of backfill was deposited at the Montreal East Wharf, Section 109.

The entrance of the Lachine Canal, obstructed following the accident to a lock gate, which occurred in new Basin No. 1 during the summer, was cleared by the Harbour dredge and derricks and these units prepared the seat for a small wooden crib to replace the one carried away at the time.

A considerable amount of Maintenance Dredging was also carried out during the season, mostly at berths where wire cables, coal, logs, etc., were encountered.

TESTING AND SWEEPING

Testing and Sweeping operations were carried on as time permitted and when tugs could be conveniently spared.

The following are the quantities of dredging and filling for the season:

Dredging	Cu. Yds. (Scow)	Cu. Yds. (Scow)
Lachine Canal, Entrance Lock No. 1..	5,100	
Maintenance: Guard Pier.....	1,550	
Windmill Point Basin..	36,200	
Sections 12 and 13....	6,100	
“ 15.....	24,900	
“ 17.....	3,150	
“ 19.....	100	
“ 40.....	1,400	
Sutherland Pier.....	8,450	
Sections 99-100.....	400	
Laurier Pier Reconstruction, crib seats	20,150	
Deepening berth, Canada Cement		
Wharf.....	18,150	
Deepening berth inside McColl-Frontenac Wharf.....	23,200	
Total Material from H. C. M. Dredge..		148,850
Material from Government Dredge No. 107.....		129,290
Material from other sources.....		7,600
Ballast and rubbish.....		6,125
Total Material to Fill.....		291,865

	Cu. Yds. (Scow)	Cu. Yds. (Scow)
Filling (By Derrick):		
Lachine Canal, Entrance Lock No. 1..	1,000	
Guard Pier.....	5,525	
Sections 34 and 35.....	89,990	
Laurier Pier Extension.....	127,500	
Section 58.....	12,250	
Canadian Copper Refineries.....	650	
British American Oil Wharf.....	13,050	
Montreal East Wharf.....	41,900	
Total Material to fill by Derricks..		291,865

	Cu. Yds. (Estimated)
Earth, Cinders, etc., from City Contractors	(By Team)
Bickerdike Pier.....	44,650
Dominion Coal Co.....	4,500
Elevator "B".....	75
Shed No. 9.....	3,500
" 10.....	1,200
Sections 28 and 29.....	500
" 33.....	200
" 34.....	28,560
" 35.....	29,150
" 39.....	100
" 42.....	6,500
" 47.....	5,600
" 109.....	3,000
" 99.....	535
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Total Material to fill by Team.....	128,070

ELECTRICAL BRANCH

Power and Operation:

The Harbour Commissioners purchased, under contract, Electric Power from the Montreal Light, Heat & Power Consol., for their requirements, as follows:—

	H. P. Hours
Cold Storage Warehouse Bldg.....	3,874,068
Electric Railway System.....	3,444,637
Elevator No. 1 and Conveyor Galleries.....	1,820,305
Elevator No. 2 and Conveyor Galleries.....	1,608,659
Elevator No. 3 and Conveyor Galleries.....	1,190,226
Elevator B and Conveyor Galleries.....	824,537
Memorial Tower.....	18,418
Sundry Shanties.....	2,626
Freight Hoists.....	32,531
Harbour Lighting.....	1,009,700
Head Office Building.....	79,157
Victoria Pier Office Building.....	32,774
Harbour Fleet.....	30,906
Outside Companies (Lessees).....	1,240,983
Machine Shop.....	209,460
Locomotive Shop.....	7,458
Locomotive Garage.....	102,467
Berri Street Office Building.....	6,434
Harbour Hospital.....	2,292
Guard Pier Shop.....	37,560
Construction Work.....	6,721

Harbour Lighting

The lighting of the high and low level wharves was carried on by the Harbour Commissioners' Electrical Department, the power being supplied through the several sub-stations. In addition to the series lighting distributed over the Harbour, a system of multiple lighting supplied the necessary illumination on the outside of all the permanent sheds, each shed having from 4 to 5 units. The number of lamps in service

varied from time to time during the year, reaching a maximum of 328 units, and being distributed as follows:—

Series Circuit Lamps

No. 1	59	Windmill Point and Bickerdike Pier
No. 2	39	McGill Street to Elevator No. 1.
No. 3	50	Elevator No. 1 to Section No. 19
No. 4	42	Section No. 19 to Section No. 22.
No. 5	51	Section No. 22 to Section No. 40.
No. 6	59	Section No. 40 to Sutherland Pier.
Multiple Lighting	28	High Level Wharf, Sections 20 to 24
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Total	328	

Lighting of Montreal Harbour Bridge

The lighting of the Harbour Bridge was also supplied from the Harbour Commissioners' Beaudry Street Station, the number of units being as follows:—

Series Circuit Lamps

No. 7	46	West side of Bridge (Alternate)
No. 8	47	East side of bridge do
No. 9	43	West side of Bridge do
No. 10	42	East side of Bridge do
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Total	178	

Railway Electrification

In order to obviate any further damage to our overhead system in the Canadian Vickers to Imperial Oil section of the electrified railway by spring ice shoves, it was decided to do away with the poles on the riverside of the railway embankment, where there is only one or not more than two tracks, and substitute a steel bracket construction on the inside poles to carry the overhead system, thirty-five of these brackets having been installed during the season and leaving about an equal number yet to be constructed. This will provide better

service conditions, as the height of the trolley can be maintained at a more uniform level and results in a construction of much neater appearance.

Grain Elevator System

During the year several changes have been made in the Conveyor Gallery belt drives. Motors which were formerly driving only one belt have been altered mechanically to drive two belts. In the elevators proper, various motors have been changed from rope drives to chain drives. These changes have all been carried out in conjunction with the Mechanical Department.

Electrical Sub-Stations

Alterations and additions have been carried out during the year at No. 3 and No. 5 Stations, at the Harbour Yard and at Elevator "B," with a view to eliminating the power factor penalties and reducing costs of operation.

No. 3 Station was tied in with No. 4 Station at Beaudry Street in the month of June, 1931. With this arrangement, the power factor penalty was completely eliminated, dating from the month of July, by correction carried out with the synchronous machinery in No. 4 Station. In addition, the tie-in line between No. 3 and No. 4 Stations enables us to feed No. 3 Station during the night, all light load periods and throughout the five months of the winter season. This means a considerable saving in the cost of operation.

With reference to No. 5 Station at Elevator "B," an aerial transmission line has been erected over the Canal for the winter months only. This station is now being supplied from No. 4 at Beaudry Street, which automatically takes care of power factor through its synchronous machinery.

Alterations were made in No. 4 Station at Beaudry Street with reference to the controls of the Storage Warehouse and Power House machinery. All this equipment was formerly controlled from what was known as the Cold Storage Board

on the second floor of the station. These controls have all been removed, those for the ammonia compressors, etc., being installed in the Storage Power House and those for the individual motors in the Warehouse proper are installed alongside their respective machines in charge of the person responsible for the machine.

Services to Outsiders

Permanent equipment was installed at Berths 7, 9, 12, 14 and 15 to provide convenient connections for the use of ocean vessels during the navigation season and for winter lay-ups of either ocean or inland vessels. These connections are distributed along the outside of the sheds and are for 110 volts A.C. power, the capacity being large enough to take care of the complete lighting system of vessels up to 20,000 tons, each connection being made to the switchboard of the vessel after their own generator has been disconnected.

General

With a view to economizing on electrical consumption for the Harbour Lighting System, it was decided towards the end of the season to change the lighting units throughout the Harbour from 1,500 c.p. to 600 c.p. lamps.

A similar change was made in April in the Harbour Bridge Lighting System, that is, 600 c.p. lamps were substituted for the existing 1,000 c.p. ones.

The following is a comparative statement of Freight Hoists, supplied with Power through the several sub-stations during the season of 1931:

Hoist	Year	Teams Carried	Days in Operation	Started	Stopped
1	1929	13,042	202	Apr. 16	Dec. 14
	1930	9,602	202	21	13
	1931	9,519	202	20	12

Hoist	Year	Teams Carried	Days in Operation	Started	Stopped
2	1929	15,925	208	Apr. 22	Dec. 21
	1930	19,812	202	21	13
	1931	18,571	202	21	12
3	1929	18,147	196	Apr. 30	Dec. 21
	1930	15,171	203	21	13
	1931	14,629	203	20	12
4	1929	5,770	202	Apr. 22	Dec. 14
	1930	5,060	196	28	13
	1931	6,217	203	20	12
5	1929	7,991	203	Apr. 22	Dec. 14
	1930	7,127	201	21	13
	1931	5,163	202	20	12
6	1929	7,347	202	Apr. 22	Dec. 14
	1930	6,735	196	21	6
	1931	164	15	21	May 7
7	1929	7,530	208	Apr. 22	Dec. 21
	1930	4,022	196	21	6
	1931	3,281	203	20	12
8	1929	14,863	208	Apr. 22	Dec. 21
	1930	16,275	211	21	24
	1931	18,993	207	15	12
9	1929	15,518	208	Apr. 19	Dec. 19
	1930	14,862	203	21	13
	1931	18,446	210	14	12

MAINTENANCE

Wharves

The maintenance force, in addition to ordinary patching of wharves, examination of sewer outlets, examination of crib bottoms for scourings and attention where necessary, taking care of temporary pile clusters, landings and floating platforms used during the season by the different industrial companies in the Harbour, as well as the Elevator No. 2 Jetty bridges and stairs, carried out the following work:

Driving of Piles:

32 piles at Section 61 for Shell Oil Co.

26 piles at Section 69 for Independent Sand Co.

8 piles at Section 107, to connect mole and new concrete wharf for the British American Oil Co.

Wharf Repairs

Repaired the face of the upstream side of Alexandra Pier throughout its length involving the renewal of approximately 55,000 cu. ft. of cribwork.

Repaired the face of the old wooden wharf on the low level Section 41 for a length of approximately 175 ft. by 7 ft. high and 6 ft. wide.

Repaired the downstream end of Racine Pier for a length of 100 ft. by 10 ft. high and 12 wide.

Repaired the pile wharf extension on the Sutherland Pier and re-surface the whole area with 3 and 4 in. planks, 65 ft. x 85 ft.

Repaired the old wooden wharf at Section 40 for a length of approximately 150 ft. x 9 ft. high and 16 ft. wide.

Finished the filling and planking of that portion of the north entrance to the Lachine Canal which was rebuilt during 1930. An area approximately 180 ft. long x 12 ft. wide.

Carried out various other miscellaneous items.

Transit Sheds

The usual maintenance of roofs, skylights, doors, floors, chutes, etc., etc., was carried out by the Sheds Maintenance Forces during the season.

Plumbing

The laying of sewer and water main extensions, the equipment of lavatory rooms, the repair and renewal of the plumbing system along the waterfront, including all buildings,

transit sheds, grain elevators, owned by the Commissioners, were carried out by the usual plumbing force.

Roadways, Sheds, Water Service, etc.

The general cleaning and watering of the wharves, roadways and sheds was kept up during the season.

Water service to sheds and latrines was connected up by May 9th and kept in good order throughout the season. This service was discontinued on December 5th, except for Sheds 8 and 47, which were kept open during the winter.

The sheds were kept clear of all rubbish throughout the season, the refuse being put on scows placed at the sheds for this purpose, and the scows taken away regularly when loaded.

4,019,700 cubic feet of fresh water was supplied to 667 ships during the navigation season.

The Quick Acting Gates in the Flood Protection Wall were kept in good working order at all times, and the steps placed at Sections 12, 14, 18 and 19 for the purpose of allowing pedestrians on and off the wharves when the Flood Gates are closed, during the winter season only, were kept free of snow and ice.

The usual force of watchmen, etc., was employed to protect the property of the Commissioners, to guard the public from accident and to regulate the Harbour dumping grounds.

Life Saving Equipment

The usual precautions were taken to facilitate the saving of life and the prevention of accidents by the maintenance of railings and the distribution of ropes, gaffs and life preservers at frequent intervals along the waterfront, and these proved their value on a number of occasions during the season.

Fire Prevention

All hydrants and fire equipment were inspected daily and kept in readiness for service.

All fire extinguishers were recharged on May 1st and kept in operating condition, by daily inspections, and some of them were used on a number of occasions, but apart from the fire in Shed No. 12 on November 28th, 1931, no damage was done to Harbour property worth reporting.

Mechanical Equipment

The principal items of equipment attended to during the year were:

Elevator No. 1

Lofter Legs 5 and 10 were fitted with Hyatt Roller bearings and No. 11 Leg was fitted with Ransome & Marle ball bearings.

New 150 h.p. Chain Drive was installed at Lofter Leg No. 5.

New 30 h.p. shovel chain drives were installed in old Marine Tower and 4 clutch type shovel drums, speeding up the shovels.

Nos. 6 and 7 Conveyor Drives on Bagging Floor were changed to $7\frac{1}{2}$ h.p. chain drives.

Scales 1, 2, 3, 4, 5 were strengthened and four new rotary valves were installed in upper garners 5, 6, 7 and 8.

In Tower "A," Lofter Leg "C," the drive motor was replaced by a Lancashire Dynamo and Motor ball bearing motor.

Galleries

In Galleries 7 and 9, chain drives were moved to end of Gallery 9 new extension, one 60 h.p. motor driving the two belts.

New 60 h.p. chain drive was installed in Tower "H."

New 40 h.p. chain drive was installed in Tower "M."

The work of replacing babbitt bearings in the central portion of the Harbour Conveyor System with ball and roller bearings, which was commenced in 1930, was continued.

Elevator and Conveyor Belt Replacements

Elevator No. 1:	One 36 x 4 ply x 1,100 ft., Conveyor Floor, April 20th.
	One 36 x 4 ply x 200 ft., Cross-over Belt, March 12th.
	One 22 x 7 ply x 175 ft., Marine Tower, Old House, March 5th.
Elevator No. 2:	One 26 x 7 ply x 250 ft., Marine Tower No. 1, Jan. 26th.
	One 26 x 7 ply x 250 ft., Marine Tower No. 2, April 16th.
	One 36 x 4 ply x 735 ft., North Side House, January 23rd.
	Eight 34 x 7 ply x 475 ft. Car Legs, April 26th.
Elevator B:	One 36 x 4 ply x 1,500 ft., Conveyor, April 23rd.
Galleries:	One 36 x 4 ply x 700 ft., Gallery 17-17A, January 31st.
	One 36 x 4 ply x 790 ft., No.1 Feed Gallery, February 15th.
	Two 36 x 4 ply x 500 ft., Gallery 9, April 15th.

Hoists

Twenty-five hoists were overhauled and their cables inspected.

Cold Storage Plant Equipment

The refrigerating equipment in both the Warehouse and Power House continued to give satisfactory service throughout the year. The only new work was the changing of the control of the three compressors in the Power House. These previously were controlled from Sub-station No. 4. The starting switches and apparatus have been installed in the Power House by their respective machines, thus permitting

the shift engineer to start and stop the machines direct and eliminating the remote control and attendants.

During the year 2,135 100-lb. blocks of ice were made and delivered to the various harbour works and fleet.

New 35" x 85' belt was fitted to Compressor No. 1 in Power House.

Harbour Yard Shops

From the beginning of the year to the opening of navigation the shops were kept busy fabricating the two Shiploaders Nos. 8 and 10. Due to comparative shortage of work carried out during the year, a reduction of the shop forces was made and the men remaining worked only 30 hours per week for the greater part of the year. The Locomotive Shop and maintenance and repairs of locomotives were transferred from the Traffic Department to the Engineering Department.

The total number of orders executed in these shops and their allocation are as follows:—

Elevator No. 1.....	97
Elevator No. 2.....	62
Elevator No. 3.....	38
Elevator B.....	40
Conveyor System.....	100
Electrical Department.....	148
Locomotive Cranes, etc.....	163
Guard Pier, Fleet and Shipyard.....	265
Traffic Department.....	443
Cold Storage.....	39
General.....	559
Total.....	1,954

A wide variety of work was carried out in these shops in a satisfactory manner.

Floating Plant

The only vessel wintering on the Commissioners' shipways was Scow No. 45, which was condemned and broken up during the summer.

The necessary winter repairs to the Fleet were carried out, but only the following units were put in service at the opening of navigation 1931:

"Sir Hugh Allan," "Robert Mackay," "St. Peter," "Messenger," one dredge, two derricks, shop derrick, floating crane, testing boat and pile driver. During the season one more tug and one more derrick were placed in commission.

The fitting of concrete block ballast in the hull of the 75-ton Floating Crane was continued.

The tug "Sir Hugh Allan" was docked for the inspection of tail shaft and stern bearing, to comply with the law, on April 10th. Her bottom was scraped and painted. She was launched on April 12th.

Tug "John Young" was hauled on the ways May 29th to have framing under boiler and keelsons renewed and shaft inspected. She was launched on July 23rd.

Tug "Robert Mackay" was hauled on the ways July 30th for shaft inspection and general repairs. She was launched on August 13th.

Tug "Aberdeen" was hauled on the ways September 10th for shaft inspection and general repairs. She was launched October 9th.

Tug "St. Peter" was hauled on the ways August 19th for inspection and repairs to rudder stem. New shaft was put in. She was launched September 4th.

Tug "David Seath" was hauled on the ways October 15th for inspection of shaft and repairs. She was launched October 25th.

Testing Boat was hauled on the ways April 13th for repairs to deck and calking. Machinery was overhauled. She was launched May 5th.

Barge "Ethel" was hauled on the ways December 4th for the winter.

Yacht "Messenger" engines were overhauled.

FLOATING CRANE

The record of work done by the 75-ton Floating Crane is as follows:—

Number of working days.....	206
Number of days working.....	145
Total number of lifts:	
Commercial.....	918
Commissioners' Service.....	63
	981
Average weight of lifts:	
Commercial.....	13 tons
Commissioners' Service.....	18 "
Greatest Lift:	
Commercial.....	68 "
Commissioners' Service.....	75 "
Greatest tonnage from single ship:	
S.S. "Vallemare".....	657 "
Total weight lifted:	
Commercial.....	11,451
Commissioners' Service.....	1,119
	12,570 "
Total weight lifted season 1930.....	17,171 "
Total number of lifts made season 1930.....	2,111 "

COAL HANDLED BY LOCOMOTIVE CRANES

The amount of coal handled by our cranes from ships was less than the figures of last year by about 3,000 tons. The distribution of working time is as follows:

	1931	1930	1929	1928
On coal.....	82%	69.7%	45.6%	34.8%
On Harbour work....	7%	7.9%	21.2%	33.4%
Miscellaneous.....	11%	22.4%	33.2%	31.8%

EMPLOYMENT IN THE HARBOUR OF MONTREAL

The following table shows the maximum and average number of workmen employed by the Harbour Commissioners during the season of 1931, in the various operations of the

Port, exclusive of men employed by the different contractors on Harbour construction work:—

	Average	Maximum
Elevator No. 1: Operation.....	35	36
Boat shovellers.....	29	33
Elevator No. 2: Operation.....	32	34
Car shovellers.....	6	6
Boat shovellers.....	26	34
Baggers.....	12	28
Elevator No. 3: Operation.....	37	38
Boat shovellers.....	29	46
Elevator "B": Operation.....	32	35
Car shovellers.....	7	7
Boat shovellers.....	19	29
Elevator Repair Gang.....	45	62
Conveyor Galleries: Elevators 1 and 2...	46	47
Elevator 3.....	11	17
Elevator "B".....	8	9
Cold Storage Warehouse, Operation.....	31	34
Power House Operation, Refrigeration...	12	15
Power House Operation, Electrical.....	13	14
Railway Traffic Operation.....	91	104
Machine Shop (Harbour Yard) and Locomotive Round House.....	102	119
Shipyard.....	22	37
Guard Pier Repair Shop.....	32	42
Electrical Department.....	76	94
Transit Sheds Maintenance.....	20	30
Construction: Wharves, tracks, etc.....	62	113
Harbour Maintenance.....	146	182
Police Department.....	49	51
Fleet Watchmen.....	10	10
Harbour Bridge: Toll collectors.....	19	20
Painters.....	29	33*
Dredging Fleet: Crews of dredges, etc...	95	101

*These men were not continuously employed throughout the season.

WATER LEVELS

The depth of water for navigation in the Montreal Harbour Ship Channel and on the Sill of Lower Lock, Lachine Canal, is given in the following table:—

	Depth on Old Lock Sill, Lachine Canal		Depth in Harbour Channel	
	Average 1922-31	Average 1931	Average 1930	Average 1931
May.....	19'7"	15'6"	34'6"	30'11"
June.....	17'7"	15'4"	34'3"	30'9"
July.....	16'3"	13'11"	34'1"	29'4"
August.....	15'2"	13'6"	32'2"	28'11"
September.....	14'4"	13'4"	30'10"	28'9"
October.....	14'4"	13'1"	30'5"	28'6"
November.....	14'8"	13'4"	29'6"	28'9"

AVERAGE DEPTH FOR EACH MONTH IN THE 30-FOOT CHANNEL AT SOREL
(30 Feet at Extreme Low Water of 1897)

Year	May	June	July	August	September	October	November	High	Low
1917.....	36' 8"	36' 6"	34' 10"	33' 6"	32' 3"	32' 6"	33' 0"	38' 2"	31' 3"
1918.....	35' 1"	33' 0"	32' 10"	30' 11"	31' 4"	32' 6"	33' 10"	36' 11"	30' 3"
1919.....	38' 7"	35' 7"	32' 5"	31' 4"	31' 1"	31' 7"	32' 9"	39' 11"	30' 3"
1920.....	33' 7"	30' 10"	30' 4"	29' 9"	29' 4"	29' 4"	29' 4"	34' 8"	28' 3"
1921.....	34' 7"	31' 9"	30' 10"	31' 7"	29' 10"	30' 2"	30' 5"	37' 6"	30' 1"
1922.....	36' 0"	33' 9"	34' 2"	32' 2"	31' 2"	31' 3"	30' 11"	37' 8"	30' 1"
1923.....	38' 4"	34' 6"	32' 4"	31' 5"	31' 4"	30' 11"	30' 9"	39' 1"	30' 0"
1924.....	38' 7"	34' 5"	32' 5"	31' 10"	31' 11"	32' 3"	31' 3"	40' 0"	30' 1"
1925.....	35' 2"	33' 9"	32' 4"	31' 8"	30' 11"	31' 2"	31' 9"	36' 6"	30' 3"
1926.....	37' 4"	34' 6"	32' 10"	31' 7"	31' 1"	31' 3"	33' 2"	39' 6"	30' 6"
1927.....	34' 3"	33' 11"	33' 3"	32' 5"	31' 3"	31' 4"	34' 10"	37' 8"	30' 5"
1928.....	40' 3"	36' 6"	34' 0"	33' 0"	32' 8"	34' 0"	34' 2"	41' 7"	31' 7"
1929.....	39' 11"	35' 11"	34' 4"	32' 9"	32' 2"	32' 3"	32' 3"	41' 4"	31' 3"
1930.....	36' 4"	35' 6"	35' 1"	33' 2"	32' 9"	31' 8"	31' 0"	37' 4"	30' 3"
1931.....	33' 3"	32' 6"	31' 5"	31' 5"	31' 6"	31' 5"	31' 8"	34' 4"	30' 9"

HARBOUR COMMISSIONERS OF MONTREAL FLOATING PLANT 1931

Description of Vessel	Hull.		When built	Engines				Capacity of Bucket	Depth can work	Remarks
	Length	Breadth		Depth	Kind of Engine	No. of cylinders	Dia. of cylinders				Length of stroke	Pressure of steam
	ft.	in.	ft.	in.	ft.	in.	lbs.	c.y.	ft.	
Dredges										
J. Kennedy (Boom Spoon).....	104	4 37	0 7	Alt. 6	1892	{	{	{	{	{
" " " " " "	104	0 36	2 11	0	1910					
No. 6 " " " " " "	104	2 39	2 10	9	1912					
Derricks										
No. 1 Clam shell	87	2 31	2 9	3	1899	{	{	{	{	{
No. 3 " " " " " "	77	0 27	6 8	0	1900					
No. 4 " " " " " "	80	5 27	10 7	6	1892					
No. 5 " " " " " "	80	1 27	10 7	6	1892	{	{	{	{	{
No. 6 " " " " " "	80	1 27	10 7	5	1892					
No. 8 " " " " " "	87	5 31	0 9	3	1915					
Tugs										
St. Peter (Fire Tug).....	74	8 16	1 8	6	1875	{	{	{	{	{
Aberdeen.....	79	3 18	3 9	0	1895					
Robert Mackay.....	80	9 17	6 10	0	1899					
Sir Hugh Allan.....	130	0 26	6 15	0	1911	{	{	{	{	{
John Young.....	91	8 22	0 9	0	1911					
Passe-Partout.....	49	1 11	3 5	7	1912					
David Seath.....	75	5 18	5 10	2	1915	{	{	{	{	{
Drilling and Blasting Boat.....	80	0 27	0 5	6	over all					

		30	2	6	4	3	7	1926	Red Wing 100HP	6	5	6	
Motor Boat "Messenger".....		30	2	6	4	3	7	1926					Wooden hull
Testing boat.....		81	4	14	0	5	2	1900					Two wooden hulls braced 16 ft. apart; overhauled 1924.
Grain barge "Ethel".....		158	0	27	11	17	2	1910					Composite hull steel and wood; capacity about 27,000 bushels.
Floating concrete machine.....		101	0	35	0	8	6						Machinery and all super- structure removed 1931, now in use as scow.
Floating pile driver.....		60	4	24	10	5	6	1896					
Floating Crane.....		200	5	43	10	10	0	1909	Capacity. 75 tons				
Scows.													
2 Flat scows Nos. 2 and 4.....		75	0	20	2	6	0	1876	67½ yds.				Max. load at 51' radius 75 tons.
1 " " 22.....		85	0	25	0	7	5	1891	150 "				Max. height of hook at 51' radius 100'.
1 " " 23.....		85	0	25	0	6	9	1891	150 "				No. 2, Rebuilt 1925
1 " " 27.....		85	0	25	0	6	9	1892	150 "				No. 22, Rebuilt 1926
2 " " 31 and 34.....		85	0	25	0	6	9	1893	150 "				Rebuilt 1925
2 " " 41 and 42.....		87	0	25	0	7	6	1904	150 "				
11 " " 44, 47, 50-53, 55 and 57-60.....		100	0	30	0	9	0	1911-23	300 "				No. 42, Rebuilt 1925
2 " " 61 and 62.....		100	0	30	0	9	0	1925	300 "				No. 50 Rebuilt 1925;
4 " " 63-66.....		100	0	30	0	9	0	1926	300 "				No. 52 destroyed and replaced by new scow built at Sorel.
1 " " 67.....		100	0	30	0	9	0	1927	300 "				
2 " " A-6 and A-7.....		40	0	24	9	4	6						
1 Driver's scow No. A-1.....		46	3	18	0	4	3	1924					Purchased 1926
2 Dust scows Nos. A-2 and A-3.....		45	4	15	0	3	4	1926					
3 Dump scows Nos. 36, 37 and 38.....		106	0	26	10	9	6	1900	200 "				No. 36 Reblt. 1924; No. 37 Reblt. 1925
10 Flat scows Nos. 21, 26, 28, 35, 39, 40, 43, 46, 54, and 56.....		These	scows	totally	unfit	for	use.						

(Note.—S.Y. "Bethalma" sold 1931. Flat scows Nos. 33 and 45 broken up 1931.

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